"Miniwatt"

TECHNICAL DATA

- VALVES
- PICTURE TUBES
- SEMI-CONDUCTOR DEVICES

7th. EDITION

25/-

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Seventh Edition

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PREFACE

The seventh edition of the Miniwatt Technical Data book has been completely revised and amended to satisfy the requirements of engineers and servicemen for an up-to-date reference of comprehensive information. Data relating to more than 270 new valve types has been included in addition to recent releases of semi-conductors and television picture tubes. Data previously presented in the sixth edition has been retained and revised where applicable.

In all, the seventh edition contains some 1700 valve types, 160 semi-conductor types and no less than 68 television picture tube types. General information relating to valve operating conditions are to be found in the introductory sections and it is recommended that this information be referred to when interpreting the data concerned.

A comprehensive cross-reference index is provided to permit the identification of identical valves classified under different type numbering systems. As far as possible, details of all types of electronic valves, picture tubes and semi-conductor devices likely to be encountered in Australia have been included.

The inclusion of any individual type in this publication, however, does not necessarily imply its ready availability in this country.

RECEIVING VALVES AND THEIR TYPE NUMBERING

In the early years of valve manufacture, identification of different valve types was left to the choice of individual manufacturers. There was no recognised system. With the increase in valve usage and the introduction of a great number of new types, many of which varied only in some minor degree to an already established type, much confusion resulted.

Valve manufacturers in the United States of America were the first to attempt some degree of standardisation of type numbering. Ultimately, as a result of their efforts, this function was delegated to an independent co-ordinating authority—the Radio Manufacturers' Association (R.M.A.), which body has in recent years changed its name to the Electronic Industries Association (E.I.A.).

With very few exceptions all electronic devices manufactured in the U.S.A. to-day are registered with the E.I.A. and bear type numbers allocated by that organisation. The major disadvantage of the E.I.A. system of type numbering is that it does not indicate the class of valve involved and/or the purpose for which it is intended.

There is a present-day tendency for manufacturers in countries other than U.S.A. to also register their valves with the E.I.A. and in this way a commendable trend towards world standardisation is being evolved.

The position in Europe was always more difficult to resolve, as standardisation would have required an understanding on an international basis. Lacking any acceptable independent co-ordinating authority (similar to the American E.I.A.), valve-type numbering has remained the prerogative of the individual manufacturer. There has, however, been an increasing usage of the type-numbering system first introduced by Philips (Holland) in 1934. To-day by far the greater number of valves sold in Europe bear these Philips system type numbers.

The greatest advantage of the Philips system of type numbering is, that with a knowledge of the basic code, it is immediately possible to identify the type of construction and the purpose for which the valve is intended.

Because of its world-wide activities the Philips organisation is currently using both European and American type-numbering systems for its product, and in this publication cross-referencing has been used where identical valve types appear in both classifications.

Each type-numbering system does convey certain important information to the valve user, and an understanding of the basic concepts of each system as given below will prove invaluable.

1. EUROPEAN SERIES—OLDER SYSTEM (PRIOR TO 1934)

The type numbers allocated to Philips receiving valves prior to 1934 consisted of a letter followed by either a three-or four-figured number (e.g. A415, B2043). In this system the letter indicated the filament or heater current, whilst the first figure in the case of a three-figured number, and the first two figures in the case of a four figured number, indicated the filament or heater voltage. The last two figures of the number indicated the amplification factor if the valve was a triode, or, in the case of a multi-grid valve, the type classification. The key to this system is given in the following tables.

Letter

A—Filament current of 0.06–0.10 amps.
B—Filament current of 0.10–0.20 amps.
C—*Filament* current of 0.20–0.40 amps.
D—Filament current of 0.40–0.70 amps.
E—Filament current of 0.70–1.25 amps.
F—Filament current of 1.25 amps. and over.

1st Figure or 1st and 2nd Figures (see text)

Filament or heater voltage.

2nd and 3rd Figures or 3rd and 4th Figures (see text)

(i) *For triode valves.*—Amplification factor for published operating conditions.

(ii) *For multi-grid valves.*—

41, 51, 61, etc.: Tetrodes with space charge grid.
42, 52, 62, etc.: Radio frequency tetrodes.
43, 53, 63, etc.: Output pentodes.
44, 54, 64, etc.: Diode triodes, diode tetrodes (binodes).
45, 55, 65, etc.: Remote cut off R.F. tetrodes (selectodes).
46, 56, 66, etc.: R.F. pentodes.
47, 57, 67, etc.: Remote cut off R.F. pentodes (selectodes).
48, 58, 68, etc.: Hexode mixers.
49, 59, 69, etc.: Remote cut off hexode mixers.

2. EUROPEAN SERIES—PRESENT SYSTEM

The present system used consists of a number of capital letters followed by either one or two figures (e.g. EBC3, EL33). The first letter indicates the filament or heater rating, whilst the remaining letters give the type classification. The figures indicate both individual type identification and the valve base and/or type of valve construction used. In some cases a letter suffix is used to indicate a minor constructional or characteristic change (e.g. EL33—EL33A). The key to this system is given in the following tables.

1st Letter (Filament or Heater Ratings)

A—4V. AC type
B—180mA DC type.
C—200mA AC/DC type.
D—Battery types up to 1.4V. DC.
E—6.3V. AC type.
F—13V. car radio type.
G—5V. AC type.
K—2V. battery type.
P—300mA AC/DC type.
U—100mA AC/DC type.
V—50mA AC/DC type.

2nd and Subsequent Letters (Type Classification)

A—Single diode.
B—Double diode.
C—Triodes except output triodes.
D—Output triode.
E—Tetrode.
F—Pentodes except output pentodes.
H—Hexode or heptode.
K—Octode.
L—Output pentode.
M—Tuning indicator.
P—Secondary emission valve.
W—Half wave gas-filled rectifier.
X—Full wave gas-filled rectifier.
Y—Half wave high-vacuum rectifier.
Z—Full wave high-vacuum rectifier.

Number Sequence

1–10—Pinch type construction valves fitted with European 5-pin (V base) or 8-pin (P base) side contact bases or international octal bases with European basing connection sequence.
11–19—European type metal valves and glass valves fitted with European metal bases.
20–29—All-glass valves fitted with 8-pin Loktal type American bases.
30–39—Pinch type construction valves fitted with international octal bases with American basing connection sequence.
40–49—All-glass miniature valves fitted with 8-pin Rimlock base.
50–59—Special construction types fitted with bases applicable to design features used.
60–64—All-glass valves fitted with 9-pin base.
65–79—Sub-miniature all-glass valves with or without bases.
80–89—All-glass miniature valves fitted with 9-pin American "Noval" type base.
90–99—All-glass miniature valves fitted with 7-pin American "Button" type base.

Exceptions to Above

(a) DAC21, DF21, DF22, DK21, DL21, DLL21 are of pinch type construction fitted with international octal bases with European base connection sequence.
(b) ECH3G, ECH4G, EK2G, EK2G/GT, EL3G, EL3NG, KF3G, KK2G, KL4G are of pinch type construction fitted with international octal bases with American base connection sequence.
(c) KK2 (Cap E) is of pinch type construction fitted with a medium 7-pin American base.
(d) EBF2G, EBF2GT/G, EBF35 are of pinch type construction fitted with international octal bases with European base connection sequence.

3. AMERICAN SERIES—OLDER SYSTEM

The first system used in America after some degree of type numbering standardisation was achieved consisted of a two-letter prefix indicative of the base, followed by a three-figured number, the first figure of which supposedly indicated the valve manufacturer and the last two figures the type identification (e.g. UX280). With the establishment of additional manufacturers, this system was discarded and a two-figure number system established. Although some attempt was made initially to classify types into numerical sequence (e.g. rectifiers 80, 81, 82, 83, 84), the introduction of many new types rendered this impossible, and the type number in the majority of cases gave no indication of the valve type or purpose.

4. AMERICAN SERIES—PRESENT SYSTEM

The present system consists of a number sequence followed by either one or two capital letters and a further number, and, in some cases, a letter sequence suffix (e.g. 25L6GT).

The first number sequence is indicative of the filament or heater voltage. The first letter sequence is purely individual type identification without reference to classification. The second number represents the number of effective electrodes to which external connection is possible. The letter sequence suffix is indicative of type of construction. The following tables give the key to this system.

1st Figure Sequence

0—Cold cathode types.

1—1.4V. and 2V. battery types.

2—2.5V. AC types.

3—2.8V. battery types (centre tapped filament for either 1.4V. or 2.8V. operation).

5—5V. AC types.

6—6.3V. AC types.

7—7.0 V. AC types (all-glass, Loktal base), nominal operating heater voltage 6.3V.

12—12.6V. AC/DC types (in some cases centre tapped heaters for either 6.3V. or 12.6V. operation).

14—14.0V. AC/DC types (all-glass, Loktal base), nominal operating heater voltage 12.6V.

15 and above—Heater voltage to nearest indicated volt.

1st Letter Sequence

Type identification without reference to application except that in the case of two-letter sequences commencing with the letter "S" a single-ended construction is indicated (e.g. 6SK7GT).

2nd Figure Sequence

Indicates the number of effective electrodes to which external connection can be made. Internally-connected electrodes are disregarded.

N.B.—There have been many exceptions to this system in the past.

2nd Letter Sequence

The use of a suffix has developed generally as a result of the adaptation of an existing type to a different construction. The most common suffixes are "G," "GT/G," "G/GT," and "GT."

The suffix "G" was originally intended to denote a valve in a conventional dome-shaped glass bulb construction which was an electrical counterpart of an existing type in a metal construction (e.g. 6A8—6A8G). Later it was used to indicate any valve in either a dome-shaped or tubular glass bulb fitted with a small or medium shell octal base (e.g. 1A7G, 6U7G).

The suffixes "GT/G" and "G/GT" are synonymous and were introduced to indicate a valve electrically identical with a type bearing the "G" suffix, but in a tubular bulb fitted with either an intermediate shell or a metal sleeve small wafer octal base (e.g. 6A8GT/G). The use of these bases gives an overall reduction in height due to the bulb being seated within the base instead of on top of the base, as in the "G" construction.

The composite suffixes "GT/G" and "G/GT" have now been superseded by the "GT" suffix, which is applied to any valve in a tubular glass bulb fitted with either an intermediate shell or metal sleeve small wafer type octal base (e.g. 6V6GT, 1B3GT).

Other suffixes used either alternatively or additionally are as follows:—

A, H, P, T, V—Indicates a minor structural or electrical change.

L—Indicates a semi-ruggedised version of an existing type.

MG—Indicates a combined metal-glass construction.

S—Indicates a metal sprayed valve, with the exception of type 6B7S which indicates a remote cut off version of type 6B7.

W—Indicates a ruggedised version of an existing type.

X—Indicates the use of a ceramic base.

Y—Indicates the use of a low loss phenolic base.

LIST OF SYMBOLS AND ABBREVIATIONS

The symbols used in this book have been divided into two groups, viz.:

(A) those used in the data columns;

(B) those used in the base pin connection columns.

This procedure is necessary to obviate confusion arising from some degree of duplication existing in the conventionally adopted symbols used to indicate electrical units and valve electrodes.

In certain cases use has been made of both inferior and superior suffixes in association with the symbols. In general, these suffixes have three main applications, as follows:—

(1) To identify the various grids of a multi-grid assembly, that grid closest to the cathode being designated as Grid No. 1; e.g.:

G_1 represents Grid No. 1 or signal grid of a pentode,

G_2 represents Grid No. 2 or screen grid of a pentode.

(2) To identify the various sections of a multi-purpose valve; e.g.:

G_1^h represents Grid No. 1 of the hexode section of a triode-hexode converter,

G_1^t represents Grid No. 1 of the triode section of the same valve.

(3) To identify the various sections of a multi-section valve, e.g.:

A', G_1' and K' represent the anode, grid and cathode respectively of one section of a twin triode, while

A'', G_1'' and K'' represent the anode, grid and cathode respectively of the second triode.

Additionally, some suffixes have individual meanings: for instance, A_s represents the starting anode of a gas-filled rectifier. In general, it will be found that the meaning of the suffixes is self-evident when reference is made to the title given to each particular valve in the "Description" column.

(A) IN DATA COLUMNS

A	amperes
°A	degrees Angstrom
AC	alternating current
AF	audio frequency
AVC	automatic volume control
B+	DC voltage supply, positive terminal
B—	DC voltage supply, negative terminal
cm	centimetre
D	diode plate
DC	direct current
d	dynode
dB	decibels
F	filament
°F	degrees Fahrenheit
FM	frequency modulation
G	grid
G_m	mutual conductance
H	heater
I_a	anode or plate current
K	cathode
°K	degrees Kelvin
Kc/s	kilocycles per second
kV	kilovolts
Mc/s	megacycles per second
MΩ	megohms
mA	milliamperes
mm.	millimetres
mV	millivolts
mW	milliwatts
P.E.	photo-electric
R	resistor
R_s	shunting resistor
R.C.	resistance-capacity coupled
R.F.	radio frequency
R.M.S.	root mean square
U.H.F.	ultra high frequency
μ	amplification factor
μA	microamperes
μF	microfarads
μmhos	micromhos
μsecs	microseconds
μμF	micro microfarads
V	volts
V.H.F.	very high frequency
W	watts
Ω	ohms
approx.	approximately
auto.	automatic
conv.	conversion
freq.	frequency
max.	maximum
min.	minimum
osc.	oscillator
sens.	sensitivity
$>$	greater than,
$<$	less than

(B) IN BASE PIN CONNECTION COLUMNS

A	anode or plate
A_s	starter anode
BS	base spigot
D	diode plate
DE	deflection electrode
d	dynode
E	electrode
F	filament
F+	filament positive
F—	filament negative
F_t	filament tap
G	grid
H	heater
H_t	heater tap
IC	internal connection
IS	internal shield
J	jumper connection
K	cathode
M	metallization
NC	no connection
R	resistance
S	shield or base shell
T	target
TC	top cap

CATHODE RAY TUBES AND THEIR TYPE NUMBERING

Just as with receiving valves, there are two major type numbering systems in present use for cathode ray tubes, of which picture tubes form one division. Details of each system are presented below.

1. EUROPEAN SYSTEM

This system consists of two capital letters followed by two sets of figures (e.g. AW-53-80). The first letter indicates the method of focus and deflection. The second letter indicates the screen properties. The first figure group indicates dimensions of the screen, while the second group of figures indicates a particular design.

The key to this system is given below:—

1st Letter

A—Magnetic deflection, electrostatic focusing.
D—Electrostatic deflection and focusing.
M—Magnetic deflection and focusing.

2nd Letter

B—Blue fluorescence and phosphorescence, short persistence.
C—Blue violet fluorescence and phosphorescence, very short persistence.
F—Orange fluorescence and phosphorescence, very long persistence.
G—Green fluorescence and phosphorescence, medium persistence.
L—Orange fluorescence and phosphorescence, long persistence.
N—Blue-green fluorescence and green phosphorescence, long persistence.
P—Blue fluorescence and greenish-yellow phosphorescence, very long persistence.
R—Greenish-yellow fluorescence and yellow phosphorescence, long persistence.
W—Screen for picture tubes, white screen colour, short persistence.

1st Group of Figures

For round screens—Screen diameter in cms.
For rectangular screens—Screen diagonal in cms.

2nd Group of Figures

Type classification indicating a particular design.

2. AMERICAN SYSTEM

This system consists of one or two figures followed by a letter group, then the letter "P" followed by a number (e.g. 21ALP4) .

The first figure or figures indicates the screen size. The first letter group indicates a particular design, while the letter "P" followed by a figure indicates the screen properties. The key to this system is given below.

1st Figure or Group of Figures

For round screens—Screen diameter in inches.
For rectangular screens—Screen diagonal in inches.

1st Letter Group

Letters are a particular classification applying to tubes of the same diagonal dimension.

Letter "P" and Succeeding Figure

The combination identifies a particular screen characteristic.

P1—Green fluorescence, medium persistence.
P4—White fluorescence, medium persistence.
P5—Bluish fluorescence, very short persistence.
P7—Bluish fluorescence, short persistence during excitation.
Greenish yellow phosphorescence, long persistence after excitation,
P11—Bluish fluorescence, short persistence.
P12—Orange fluorescence and phosphorescence, medium long persistence.
P14—Purple fluorescence, short persistence during excitation.
Orange phosphorescence, medium long persistence after excitation.
P15—Blue green and near ultraviolet fluorescence, very short persistence.
P16—Violet and near ultraviolet fluorescence and phosphorescence, very short persistence.
P22—Blue, green, and red phosphor combination, medium persistence.
P24—Blue green fluorescence, very short persistence.

Suffix Letters (if any)

The suffix (A, B, C, etc.), if used, indicates a modified version of the original type.

SEMI-CONDUCTORS AND THEIR TYPE NUMBERING

AMERICAN SYSTEM

The type numbering system used for designating semi-conductors in America follows essentially the principle used with receiving valves. The system consists of a figure preceding the letter "N" and followed by a figure group (e.g. 1N54, 2N109).

The key to this system is given below:—

First Figure

1-2 elements (equivalent to valve diode).
2-3 elements (equivalent to valve triode).
etc.

First Letter

N—Semi-conductor.

Figure Group

This indicates a particular design.

EUROPEAN SYSTEM

Prior to 1960, the European semi-conductor type numbering system also followed the principle used for receiving valves on that continent. However, since that date, a new system has been introduced by the major manufacturers.

Old system

The old system, following the valve type numbering principle, consisted of a two-letter prefix followed by a figure group (e.g. OA79, OC26). The key to this system is given below:—

First Letter

O—no heater.

Second Letter

A—2 element device (equivalent to valve diode).
C—3 element device (equivalent to valve triode).

Figure Group

This indicates a particular design.

NEW SYSTEM

Type numbers of semi-conductors manufactured for entertainment use, consist of two letters and three figures, while professional/industrial types consist of three letters and two figures (e.g. AF114, BY100).

The first letter indicates the material from which the semi-conductor is constructed. The second letter describes the semi-conductor type.

First Letter

A—Germanium.
B—Silicon.

Second Letter

A—Diode (including voltage dependent capacitor).
C—Low frequency transistor having $K > 0.015°C/mW$.
D—Low frequency power transistor having $K < 0.015°C/mW$.
E—Tunnel diode.
F—High frequency transistor.
L—High frequency power transistor.
P—Photo semi-conductor.
S—Switching transistor.
T—Controlled rectifier, thyristor or Shockley diode.
U—Power switching transistor.
Y—Power diode (rectifier).
Z—Reference or Zener diode.

Third Letter

Used for professional types only, and has no other significance.

Figure Group

This indicates a particular design.

SYMBOLS USED WITH SEMI-CONDUCTORS

$-V_{CB}$	—collector to base voltage.
$-V_{EB}$	—emitter to base voltage.
$-V_{CE}$	—collector to emitter voltage.
V_S	—supply voltage.
$-I_C$	—collector current.
I_E	—emitter current.
$-I_{CBO}$	—collector cutoff current (common base circuit with $I_E = O$).
P_C	—collector dissipation.
h_{fe}	—small signal current gain (common emitter circuit).
h_{FE}	—large signal or DC current gain (common emitter circuit).
f_1	—frequency at which $\lvert h_{fe} \rvert = 1$.
$f_{\alpha b}$	—alpha cutoff frequency (common base circuit).

RATING FOR RECEIVING VALVES APPLIED TO TELEVISION

The television receiver deflection and associated circuits require valves to operate under conditions uncommon to other applications. These conditions particularly apply to:

Horizontal oscillator and amplifier stage.
Vertical oscillator and amplifier stage.
Booster diode and EHT rectifier stage.

The most important ratings and terms used are discussed below:—

1. **Maximum peak positive-pulse plate voltage** is based on the actual breakdown considerations at the pulse repetition frequency and supply impedances for the type of circuit in which the valve is to operate, and is expressed as an absolute maximum value.

2. **Maximum peak negative-pulse plate voltage** is based upon considerations of valve failure caused by plate emission at the time the plate swings negative with respect to the cathode.

3. **Maximum peak negative-pulse grid No. 1 voltage** is based upon grid-to-cathode leakage considerations and application requirements.

4. **Maximum peak inverse plate voltage** (used for high-voltage rectifiers and booster diodes) is based on the actual voltage breakdown at the pulse repetition frequency and impedances encountered for the type of circuit in which the valve is to operate, and is expressed as an absolute maximum value.

The maximum duration of the voltage pulse allowed for valves operating under peak pulse voltage conditions must not exceed 15% of one scanning cycle.

In the Australian 625-line 25 pictures/sec. television system, 15% of one horizontal scanning cycle is 10 μsecs., while 15% of one vertical scanning cycle is 3 milliseconds.

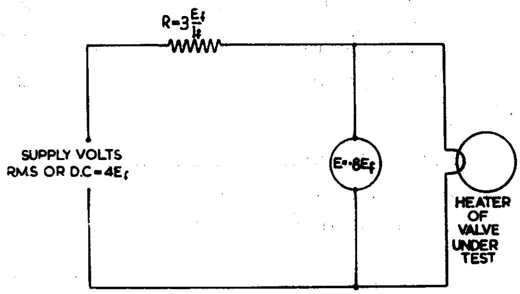
The following valve types, however, should be noted as exceptions to the above: 1S2, 6CJ6, 6CM5, 6CN6, 6R3, 6S2A, 6AB8, 16A5, and any others in the text individually specified.

For those of the above types associated with horizontal deflection circuits the maximum duration of the peak voltage pulse must not exceed 18% of one horizontal scanning cycle with a maximum of 18 microseconds, while for those used in vertical deflection circuits the maximum duration of the peak voltage pulse must not exceed 10% of one vertical scanning cycle with a maximum of 2 milliseconds.

HEATER WARM-UP TIME FOR SERIES HEATERS IN TELEVISION

The heater warm-up time, as specified for some television valves, may be interpreted as follows:—

The heater is placed in series with a resistance having a value 3 times the heater operating resistance. A voltage of 4 times rated heater voltage is then applied and the heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of its rated value.



E.H.T. FILAMENT VOLTAGE MEASUREMENT

Modern practice utilises the horizontal output transformer as a power source to operate the filament of the E.H.T. rectifier in television receivers. Adjustment of the filament voltage by direct measurement is therefore unpractical and unsafe, since it is at a high DC potential above ground.

To ensure that the rated voltage is applied to the filament several methods are in use. However, a simple method requiring a minimum amount of equipment utilises the visual colour comparison of two incandescent filaments in a darkened room.

In this method the RF filament voltage obtained from the horizontal output transformer is adjusted until the colour temperature of the filament matches that of another filament operated from a DC or low-frequency AC supply of rated filament voltage for the particular rectifier.

MINIMUM PLATE SUPPLY IMPEDANCE REQUIREMENTS FOR RECTIFIER CIRCUITS

The total plate supply impedance of a rectifier is the amount of resistance that must be present in the plate circuit in order to avoid flash-over and hence possible destruction of the valve or semiconductor.

The minimum requirements for the amount of impedance is always stated, and depends upon:

1. The applied voltage to the rectifier.
2. The output current drawn from the rectifier.
3. Type of filtering system and value of input capacitor, if used.

Where there is a transformer between the mains supply and the rectifying device, this protective resistance will be provided either fully or partially by the ohmic resistance of the transformer windings, in which case

$$R_t = R_s + n^2 R_p + R$$

where R_t = total resistance required/plate;

R_s = ohmic resistance provided by the secondary of the transformer, or half the secondary in a full wave circuit;

n = transformer turns ratio;

R_p = ohmic resistance provided by the transformer primary winding;

R = resistance that must be added to make up the total R_t/plate.

INSTALLATION AND HANDLING OF TELEVISION PICTURE TUBES

The installation and handling of television picture tubes must be carried out with the utmost care.

Because the bulb is completely evacuated, an atmospheric pressure of 14.7 lb. is exerted on every square inch of its surface. This represents a pressure of 1.9 ton exerted on the face plate of a 23″ screen. Shock or damage to the tube can cause it to implode and shatter with possible disastrous results. Safety precautions and procedure are outlined below:—

1. Protective goggles and gloves should be worn, for personal safety, whenever handling is necessary.
2. Picture tubes should be removed from the shipping carton by placing both hands under the face plate. Handling of tubes by the neck is unsafe and should be avoided at all costs, since the neck is obviously the weakest part of the tube.
3. When not in actual use picture tubes should never be left standing in the open but should be placed in shipping cartons with the flaps closed.
4. If it is necessary to rest a tube on a bench temporarily, place it face downwards on a clean soft material away from any object that may strike the tube.
5. When removing a picture tube from a receiver, always ensure that the E.H.T. capacitor is discharged. The shock due to bodily contact with this is not severe, but can result in the tube being dropped or receiving a blow.
6. If a broken picture tube should have to be handled, remember that all phosphors cannot be guaranteed non-toxic. Treat any cuts immediately, and in any case the hands should be washed with soap and hot water after handling.

Remember that the picture tube manufacturer does not accept any responsibility for any damage or injury suffered in connection with the picture tube.

It is in your own interest to exercise extreme care at all times.

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
01A	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	F	5·0	0·25	90 135	2·5 3·0	−4·5 −9·0	— —	— —	725 800	8 8	0·011 0·010
0A2	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	150	5·0 to 30·0	—	—	—	—	—	—
0A3 / VR75	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	75	5·0 to 40·0	—	—	—	—	—	—
0A4G	**GAS TRIODE**	Relay Tube	COLD	—	—	Supply 105 to 130 R.M.S.	D.C. Cathode Current 25·0 mA.	—	—	—	—	—	—
0B2	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	108	5·0 to 30·0	—	—	—	—	—	—
0C3 / VR105	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	105	5·0 to 40·0	—	—	—	—	—	—
0D3 / VR150	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	150	5·0 to 40·0	—	—	—	—	—	—
0E3	**VOLTAGE REFERENCE**	Voltage Reference	COLD	—	—	85	1·0 to 8·0	—	—	—	—	—	—
0G3	**VOLTAGE REFERENCE**	Voltage Reference	COLD	—	—	85	1·0 to 8·0	—	—	—	—	—	—
0Y4	**HALF-WAVE GAS-FILLED RECTIFIER**	Half-wave Rectifier	IONIC	—	—	117	D.C. Output 50·0	—	—	—	—	—	—
0Z4 0Z4G	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	COLD	—	—	1000 peak max. plate to plate	D.C. Output 75·0 max. 30·0 min.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	8·1		8	F+	A	G	F−	—	—	—	—	—	—	—	**01A**
—	—	—	Starting Voltage = 155 Volts D.C.	21	A	K	IC	K	A	IC	K	—	—	—	—	**0A2**
—	—	—	Starting Voltage = 100 Volts D.C.	30	NC	K	J	—	A	—	J	NC	—	—	—	**0A3 / VR75**
—	—	—	Starter Anode Peak Voltage = 70 Volts. Cathode Peak Current 100 mA.	30	NC	K	NC	—	A	—	A_s	NC	—	—	—	**0A4G**
—	—	—	Starting Voltage = 115 Volts D.C.	21	A	K	IC	K	A	IC	K	—	—	—	—	**0B2**
—	—	—	Starting Voltage = 135 Volts D.C.	30	NC	K	J	—	A	—	J	NC	—	—	—	**0C3 / VR105**
—	—	—	Starting Voltage = 180 Volts D.C.	30	NC	K	J	—	A	—	J	NC	—	—	—	**0D3 / VR150**
—	—	—	Min. and max. operating plate voltages = 83 V. and 87 V. respectively. Quiescent current = 4 mA. Starting voltage = 125 V. D.C. A.C. Resistance = 430 Ω.	29	NC	A	NC	K	NC	NC	NC	K	—	—	—	**0E3**
—	—	—	Quiescent current = 4·5 mA. Starting voltage = 125 volts D.C. max. A.C. resistance = 290 Ω.	21	A	K	IC	K	A	IC	K	—	—	—	—	**0G3**
—	—	—	Condenser Input to Filter. Starter Electrode (100 V.) connected to Anode through a 10 Meg. resistor bypassed with a 0·002 μF capacitor. Min. Series Anode Resistance 50Ω.	30	S	—	A_s	—	A	—	K	K	—	—	—	**0Y4**
—	—	—	Starting supply voltage per plate = 300 min. peak. Tube drop 24 volts. D.C. output 300 volts max.	30 30	S NC	NC —	A_2 A_2	— —	A_1 A_1	— —	NC NC	K K	— —	— —	— —	**0Z4** **0Z4G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Miliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
1A3	**H.F. DIODE**	Detector Rectifier	H	1·4	0·15	R.M.S. 117	D.C. Output 0·5 max.	—	—	—	—	—	—
1A4	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1A4P	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1A4T	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1A5G **1A5GT**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	85 90	3·5 4·0	−4·5 −4·5	85 90	0·7 0·8	800 850	— —	0·3 0·3
1A6	**PENTAGRID**	Frequency Converter	F	2·0	0·06	★	★	★	★	★	★	—	★
1A7G **1A7GT**	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90	0·6	(G_4) 0	(G_{3+5}) 45	0·7	Conv. 250	—	0·6
1AB6	**HEPTODE**	Frequency Converter	F	1·4	0·025	65	0·7	(G_3) 0	(G_4) 65	0·15	Conv. 300	—	1·0
1AC5	**POWER OUTPUT PENTODE**	Class A Power Amplifier	F	1·25	0·04	67·5 45·0 30·0	2·0 1·0 0·5	−4·5 −3·0 −2·0	67·5 45·0 30·0	0·4 0·2 0·1	750 600 450	— — —	0·15 0·17 0·2
1AC6	**HEPTODE**	Frequency Converter	F	1·4	0·05	85	0·65	(G_3) 0	(G_4) 60 See Note	0·14	Conv. 325	—	1·0
1AD4	**SHARP CUT-OFF PENTODE**	R.F. Amplifier	F	1·25	0·1	45	3·0	0	45	0·8	2000	—	0·5
1AD5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·25	0·04	67·5	1·85	−6	67·5	0·75	735	—	0·7

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser input to Filter $2\mu F$.	21	H	A	K	NC	IC	A	H	—	—	—	—	**IA3**
—	—	—	★ *For data and notes refer type* ID5GT.	8	F	A	G_2	F	—	—	—	—	—	G_1	—	**IA4**
—	—	0·007	★ *For data and notes refer type* ID5GP.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**IA4P**
—	—	—	★ *For data and notes refer type* ID5GT.	8	F	A	G_2	F	—	—	—	—	—	G_1	—	**IA4T**
25000 25000	0·1 0·115	—	Total Harmonic Distortion 10%. Total Harmonic Distortion 7%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IA5G** **IA5GT**
—	—	0·25	★ *For data and notes refer type* ID7G.	17	F+	A	G_2	G_1	G_3 G_5	F−	—	—	—	G_4	—	**IA6**
—	—	0·5	Conversion Conductance = 5 μmhos at − 3 volts grid (G_4) bias. Grid No.2 90 volts at 1·2 mA. Osc. Grid (G_1) Resistor 0·2 meg. Osc. Grid Current 0·035 mA. Osc. Gm = 600 μmhos.	30	S	F+	A	G_3 G_5	G_1	G_2	F−	NC	—	G_4	—	**IA7G** **IA7GT**
—	—	—	Grid No.2 35 V. at 1·65 mA. Osc. Grid (G_1) Resistor 27,000 Ω. Osc. Grid (G_1) voltage = 3 V. R.M.S.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5	—	—	—	—	**1AB6**
25000 40000 50000	0·05 0·015 0·005	—	Total Harmonic Distortion 10% in each case.	31	NC	G_1	NC	F− G_3	F+	NC	A	G_2	—	—	—	**IAC5**
—	—	0·11	Series screen (G_4) resistor 0·18 meg. Grid 2 voltage = 30 V. (1·65 mA through 33,000 Ω from 90 V. supply). Osc. Grid (G_1) resistor 27,000 Ω returned to F+. Osc. Grid Current 0·13 mA. Conversion Conductance 3·25 μmhos at − 6 V. grid (G_3) bias.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5	—	—	—	—	**1AC6**
—	—	0·01	Mutual Conductance = 10 μmhos at − 3·5 volts grid bias.	50	A	G_2	F− M G_3	G_1	F+ G_3'	—	—	—	—	—	—	**1AD4**
—	—	0·01	Plate Current = 10 μA for − 6 volts grid bias.	31	NC	G_1	NC	F− G_3	F+	NC	A	G_2	—	—	—	**IAD5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
1AH5	**DIODE A.F. PENTODE**	Detector, A.F. Amplifier	F	1·4	0·025	90	1·1	0	90	0·4	400	—	1·6
1AJ4	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·025	85 64	1·65 1·65	0 0	64 64	0·55 0·55	750 750	— —	1·0 0·7
1AN5	**VARIABLE MUTUAL CONDUCTANCE R.F. PENTODE**	R.F. Amplifier	F	1·4	0·025	85† 64†	1·7 1·7	0 0	62* 63*	0·7 0·78	940 880	— —	0·45 0·25
1AX2	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	F	1·4	0·65	Peak Inverse 25000 (absolute max.)	Peak 11 (max.) Average 1 (max.)	—	—	—	—	—	—
1B3GT	**HALF-WAVE VACUUM RECTIFIER**	TV E.H.T. Rectifier	F	1·25	0·2	Peak Inverse 26,000 (absolute max.)	Peak 50 (max.) Average 0·5 (max.)	—	—	—	—	—	—
		R.F. Rectifier				Peak Inverse 33,000 (absolute max.)	Peak 30 (max.) Average 1·0 (max.)	—	—	—	—	—	—
1B4	**SHARP CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	★	—
1B4P	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1B4T	**SHARP CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	★	—
1B5 / 25S	**DUO-DIODE TRIODE**	Detector, A.F. Amplifier	F	2·0	0·06	135	0·8	−3	—	—	575	20	0·035
1C4	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·12	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·3	As R.C. Amplifier (85V. Supply) Following Grid Leak 1·0 meg. Plate Resistor 1·0 meg. Screen Resistor 2·7 meg. Grid Leak 10 meg. Gain = 55 Battery Current 85 μA.	21	F− G_3	IC	D	G_2	A	G_1	F+	—	—	—	—	**1AH5**
— —	— —	0·01	Mutual Conductance = 10 μmhos at − 5·5 and − 4·1 volts grid bias respectively.	21	F− G_3 IS	A	G_2	IC	F− G_3 IS	G_1	F+	—	—	—	—	**1AJ4**
— —	— —	0·01	†Based on H.T. battery voltage of 90 or 67·5 respectively, minus the bias of the output valve. Voltage relative to F−. Mutual conductance = 10 μmhos. at −5, −3·8 volts grid bias respectively. *Series screen resistor 33000Ω with 90V supply. 1500Ω with 67·5V supply.	21	F− IS	A	G_2	G_3	F− IS	G_1	F+	—	—	—	—	**1AN5**
—	—	—	*May be connected to one side of filament, or used as filament resistor tie point. Otherwise do not use.	32	F IS	F	* NC	F IS	F	F IS	* NC	F	F IS	A	—	**1AX2**
—	—	—	*May be connected to Pin 7 or to Corona Shield: otherwise do not use. Pins 4 and 6 may be used for Filament Resistor Tie Point	30	IC *	F	IC *	—	IC *	NC	F IS	IC *	—	A	—	**1B3GT**
—	—	—	Frequency of Voltage Supply:— Minimum 1·5 Kc/s. Maximum 100 Kc/s.													
—	—	—	★ *For data and notes refer type* IE5GT.	8	F	A	G_2	F	—	—	—	—	—	G_1	—	**IB4**
—	—	0·007	★ *For data and notes refer type* IE5GP.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**IB4P**
—	—	—	★ *For data and notes refer type* IE5GT.	8	F	A	G	F	—	—	—	—	—	G_1	—	**IB4T**
—	—	3·6	Diode No. 1 Detection. Diode No. 2 A.V.C.	17	F+	A	D_2	D_1	G_1	F−	—	—	—	—	—	**IB5 / 25S**
—	—	0·01	★ *For data and notes refer type* IM5G.	8	F+	A	G_2	F− G_3	—	—	—	—	—	G_1	—	**IC4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
IC5G **IC5GT**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	83 90	7·0 7·5	−7 −7·5	83 90	1·6 1·6	1500 1550	— —	0·110 0·115
IC6	**PENTAGRID**	Frequency Converter	F	2·0	0·12	★	★	★	★	★	★	—	★
IC7G	**PENTAGRID**	Frequency Converter	F	2·0	0·12	135 180	1·3 1·5	−3 (G_4) −3	67·5 (G_{3+5}) 67·5	2·5 2·0	300 Conv. 325	— —	0·6 0·7
ID4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·24	★	★	★	★	★	★	—	★
ID5G	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
ID5GP	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	90 180	2·2 2·3	−3 −3	67·5 67·5	0·9 0·8	720 750	— —	0·6 1·0
ID5GT	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	135 180	2·2 2·2	−3 −3	67·5 67·5	0·7 0·7	625 650	— —	0·35 0·6
ID6	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	25·0	0·3	R.M.S. 250 Max.	D.C. Output 100·0 Max.	—	—	—	—	—	—
ID7G	**PENTAGRID**	Frequency Converter	F	2·0	0·06	135 180	1·2 1·3	−3 (G_4) −3	67·5 (G_{3+5}) 67·5	2·5 2·4	275 Conv. 300	— —	0·4 0·5
ID8GT	**DIODE TRIODE POWER OUTPUT PENTODE**	Detector, A.F. Amplifier, Power Amplifier	F	1·4	0·1	90 90	1·1 5·0	0 −9	— 90	— 1·0	575 925	25 —	0·0435 0·2
1DN5	**DIODE REMOTE CUTOFF PENTODE**	Class "A" Amplifier	F	1·4	0·05	67·5	2·1	0	67·5	0·55	630	—	0·6
1E3	**AMPLIFIER TRIODE**	U.H.F. Amplifier	F	1·25	0·2	150	20	−3·5	—	—	3500	14	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
9000 8000	0·2 0·24	—	Total Harmonic Distortion 10% in each case.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IC5G** **IC5GT**
—	—	0·3	★ *For data and notes refer type* IC7G.	17	F+	A	G_2	G_1	G_3 G_5	F−	—	—	—	G_4	—	**IC6**
— —	— —	0·26	Conversion Conductance = 4 μmhos at − 14 volts grid (G_4) bias. Grid No. 2 supply 180 V. (4·0 mA) through 20000Ω. Osc. Grid (G_1) Resistor 50000Ω. Osc. Grid Current 0·2 mA. Osc. Gm = 1000 μmhos.	30	NC	F+	A	G_3 G_5	G_1	G_2	F−	NC	—	G_4	—	**IC7G**
★	★	1·0	★ *For data and notes refer type* IL5G.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**ID4**
—	—	—	★ *For data and notes refer type* ID5GT.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**ID5G**
— —	— —	0·007	Mutual Conductance = 15 μmhos at − 15 volts grid bias.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**ID5GP**
— —	— —	0·01	Mutual Conductance = 15 μmhos at − 15 volts grid bias.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**ID5GT**
—	—	—	Condenser Input to Filter 16μF. max. Plate Supply Impedance = 50Ω min.	17	H	A	NC	K	A	H	—	—	—	—	—	**ID6**
— —	— —	0·25	Conversion Conductance = 4 μmhos at − 22·5 volts grid bias. Grid No. 2 supply 180 V. (2·3 mA) through 20,000Ω. Osc. Grid (G_1) Resistor 50,000Ω. Osc. Grid Current 0·2 mA. Osc. Gm = 425 μmhos.	30	NC	F+	A	G_3 G_5	G_1	G_2	F−	NC	—	G_4	—	**ID7G**
— 12000	— 0·2	— —	Triode Unit. Pentode Unit.	30	NC	F+	A^p	$G_2{}^p$	$G_1{}^p$	A^t	F−	D	—	$G_1{}^t$	—	**ID8GT**
—	—	G_1—D 0·04	Mutual Conductance = 10 μmhos. at −11·5 volts (G_1) bias. For use as detector, A.F. amplifier in battery operated receivers.	21	F− G_3	A	G_2	D	NC	G_1	F+	—	—	—	—	**1DN5**
—	See Note	1·5	Power output = 0·45 W. at 470 Mc/s. Pin No. 3 to be used for R.F. return to filament circuit.	32	G_1	NC	F	F+	F−	NC	NC	A	NC	—	—	**1E3**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	 Voltage Volts	 Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
1E5G	**SHARP CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	★	—
1E5GP	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	90 180	1·6 1·7	−3 −3	67·5 67·5	0·7 0·6	600 650	— —	1·0 1·5
1E5GT	**SHARP CUT-OFF R.F. TETRODE**	R.F. Amplifier	F	2·0	0·06	180	1·7	−3	67·5	0·4	650	780	—
1E7G 1E7GT	**TWIN POWER PENTODE**	Class "AB$_1$" Power Amplifier	F	2·0	0·24	135	7·0	−7·5	135	2·0	—	—	—
1E8	**PENTAGRID**	Frequency Converter	F	1·25	0·04	67·5	1·0	(G_3) 0	(G_{2+4}) 67·5 Supply See Note.	1·5	Conv. 150	—	0·4
1F4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·12	★	★	★	★	★	★	—	★
1F5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·12	90 135	4·0 8·0	−3 −4·5	90 135	1·1 2·4	1400 1700	— —	0·24 0·2
1F6	**DUO DIODE PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·06	★	★	★	★	★	★	—	★
1F7G 1F7GH 1F7GV	**DUO DIODE PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·06	180	2·2	−1·5	67·5	0·7	650	—	1·0
1G4G 1G4GT 1G4GT/G	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	F	1·4	0·05	90	2·3	−6	—	—	825	8·8	0·0107
1G5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·12	90 135	8·5 8·7	−6 −13·5	90 135	2·5 2·5	1500 1550	— —	0·133 0·160
1G6G 1G6GT 1G6GT/G	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	1·4	0·1	90	Zero Signal 2·0 Max. Signal 11·0	0	—	—	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S	TYPE No.
—	—	—	★ *For data and notes refer type* IE5GT.	30	NC	F	A	G_2	NC	—	F	—	—	G_1	—	**IE5G**
— —	— —	0·007	Plate Current Cut-off at −8 volts grid bias.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**IE5GP**
—	—	—	Plate Current Cut-off at − 8 volts grid bias.	30	NC	F	A	G_2	NC	—	F	—	—	G_1	—	**IE5GT**
Plate to Plate 24000	0·575	—	Push-Pull Class AB_1. Values are for both units.	30	NC	F+	A''	G_1''	G_1'	A'	F− G_3	G_2	—	—	—	**IE7G** **IE7GT**
—	—	0·4	Conversion Conductance = 5 µmhos at − 9 volts grid (G_3) bias. Series Screen Resistor 0·02 meg. Osc. Grid (G_1) Resistor 0·1 meg. Osc. Grid Current 0·07 mA.	31	IC	G_1	NC	F− G_6	F+	A	G_2 G_4	G_3	—	—	—	**IE8**
★	★	—	★ *For data and notes refer type* IF5G.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**IF4**
20000 16000	0·11 0·31	—	Harmonic Distortion 6%. Harmonic Distortion 5%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IF5G**
—	—	0·007	★ *For data and notes refer type* IF7G.	17	F+	A	G_2	D_2	D_1	F−	—	—	—	G_1	—	**IF6**
—	—	0·01	As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Screen Resistor 1·0 meg. Grid Bias − 1 volt. Gain = 48.	30	NC	F+	A	D_2	D_1	G_2	F−	NC	—	G_1	—	**IF7G** **IF7GH** **IF7GV**
—	—	2·8		30	NC	F+	A	NC	G_1	—	F−	NC	—	—	—	**IG4G** **IG4GT** **IG4GT/G**
8500 9000	0·25 0·55	—	Total Harmonic Distortion 6%. Total Harmonic Distortion 7%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IG5G**
12000 plate to plate	0·35	—	Values are for the two units. Effective Grid Circuit Impedance per unit 2530 Ω at 400 cycles. Peak A.F. Grid to Grid volts = 48. Peak Grid Current per unit 6·0 mA.	30	NC	F+	A''	G_1''	G_1'	A'	F−	NC	—	—	—	**IG6G** **IG6GT** **IG6GT/G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
1H2	**HALF-WAVE VACUUM RECTIFIER**	TV E.H.T. Rectifier	H	1·4	0·55	Peak Inverse 30,000 (design max.)	Peak 50 (design max.) Average 0·5 (design max.)	—	—	—	—	—	—
1H4G	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	F	2·0	0·06	135	3·0	−9	—	—	900	9·3	0·0103
		Class "B" Power Amplifier				157·5	Zero Signal 1·0 Peak 50·0 Max.	−15	—	—	—	—	—
1H5G **1H5GT** **1H5GT/G**	**DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	F	1·4	0·05	90	0·15	0	—	—	275	65	0·24
1H6G	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	F	2·0	0·06	135	0·8	−3	—	—	575	20	0·035
1J3	**HALF-WAVE VACUUM RECTIFIER**	TV E.H.T. Rectifier	F	1·25	0·2	Peak Inverse 26,000 (design max.)	Peak 50 (design max.) Average 0·5 (design max.)	—	—	—	—	—	—
1J6G **1J6GT**	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	2·0	0·24	135	Zero Signal 10·0 Max. Signal 30·0	0	—	—	—	—	—
1K3	**HALF-WAVE VACUUM RECTIFIER**	TV E.H.T. Rectifier	F	1·25	0·2	Peak Inverse 26,000 (design max.)	Peak 50 (design max.) average 0·5 (design max.)	—	—	—	—	—	—
1K4	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	2·0	0·12	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—		32	H K IS	H	NC	H K IS	H	H K IS	NC	H K IS	H	A	—	**1H2**
—	—	5·5	D.C. Resistance in the grid circuit should not exceed 2·0 megohms.	30	NC	F+	A	NC	G_1	—	F−	NC	—	—	—	**IH4G**
Plate to Plate 8000	2·1		Maximum Signal Driving Power 260 mW.													
—	—	1·0		30	S	F+	A	NC	D	—	F− S_d	NC	—	G_1	—	**IH5G** **IH5GT** **IH5GT/G**
—	—	3·6	Diode No. 1 Detection. Diode No. 2 A.V.C.	30	NC	F+	A	D_2	D_1	G_1	F—	NC	—	—	—	**IH6G**
—	—	—	*May be connected to Pin No. 7 or to Corona Shield: otherwise do not use. Pins 4 and 6 may be used for Filament Resistor Tie Point.	30	IC *	F	IC *	—	IC *	NC	F	IC *	—	A	—	**1J3**
Plate to Plate 10000	2·2	—	R.M.S. A.F. Grid to Grid Voltage = 50 volts. Effective Grid Circuit Impedance per unit 1300 Ω. Driving Power 170 mW. Total Distortion 10%. Values are for two units.	30	NC	F+	A''	G_1''	G_1'	A'	F−	NC	—	—	—	**IJ6G** **IJ6GT**
—	—	—	*May be connected to Pin No. 7 or to Corona Shield: otherwise do not use. Pins 4 and 6 may be used for Filament Resistor Tie Point.	30	IC *	F	IC *	—	IC *	NC	F	IC *	—	A	—	**1K3**
—	—	0·01	★ *For data and notes refer type* IK5G.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**IK4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
IK5G	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	2·0	0·12	135	2·5	0	67·5	0·93	1050	—	1·0
IK6	**DUO-DIODE SHARP CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·12	★	★	★	★	★	★	—	★
IK7G	**DUO-DIODE SHARP CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	F	2·0	0·12	135 135	0·9 1·8	−3 0	90 67·5	0·35 0·7	600 800	— —	2·0 1·25
IL4	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	1·4	0·05	90 90	2·9 4·5	0 0	67·5 90	1·2 2·0	925 1025	— —	0·6 0·35
IL5G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·24	135 180	6·0 9·5	−4·5 −6	135 180	1·5 2·3	2150 2400	— —	0·15 0·137
1L6	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90	0·5	(G_4) 0	(G_{3+5}) 45	0·6	Conv. 300	—	0·65
ILA4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	90	4·0	−4·5	90	0·8	850	—	0·3

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·01	Plate Current Cut-off at − 6 V. grid bias. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Screen Resistor 0·75 meg. Grid Bias − 1·5 V. Gain = 75. As Triode Amplifier (Screen tied to plate). Plate 180 V. at 5·9 mA. Bias − 6·0 V. Load = 10,000Ω. Power Output = 100 mW at 5% Distortion.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**IK5G**
—	—	0·015	★ *For data and notes refer type* IK7G.	17	F+	A	D_2	D_1	G_2	F−	—	—	—	G_1	—	**IK6**
— —	— —	0·015	Plate Current Cut-off at − 6·5 V. and − 4·0 V. grid bias respectively. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Screen Resistor 1·0 meg. Grid Bias − 1·5 V. Gain = 76. As Triode Amplifier (Screen tied to plate). Plate 180 V. at 3·5 mA. Bias − 6·0 V. Load = 40,000 Ω. Power Output = 60 mW at 5% Distortion.	30	NC	F+	A	D_2	D_1	G_2	F−	NC	—	G_1	—	**IK7G**
— —	— —	0·008	Plate Current = 10 μA for − 6 V. and − 8 V. grid bias respectively. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 1·0 meg. Screen Resistor 2·1 meg. Gain = 53.	21	F− G_3 IS	A	G_2	NC	F− G_3 IS	G_1	F+	—	—	—	—	**IL4**
15000 15000	0·35 0·75	1·0	Total Harmonic Distortion 10%. Total Harmonic Distortion 8%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IL5G**
—	—	(G_4—A) 0·46 (G_1—A) 0·15	Oscillator plate (G_2) voltage 90. Oscillator plate (G_2) current 1·2 mA. Oscillator grid (G_1) resistor 0·2 mΩ. Total cathode current 2·35 mA. Conversion conductance = 10 μmhos at −3·5 volts grid (G_4) bias.	21	F−	A	G_2	G_1	G_3 G_5	G_4	F+	—	—	—	—	**1L6**
25000	0·15	—	Total Harmonic Distortion 7%.	29	F+	A	G_2	NC	NC	G_1	NC	F−	—	—	S	**ILA4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
ILA6	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90	0·55	(G_4) 0	(G_{3+5}) 45	0·6	Conv. 250	—	0·75
ILB4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	90	5·0	−9	90	1·0	925	—	0·2
ILC5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·15	0	45	0·3	775	—	1·5
ILC6	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90	0·75	(G_4) 0	(G_{3+5}) 35	0·7	Conv. 275	—	0·65
ILD5	**DIODE SHARP CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	F	1·4	0·05	90	0·6	0	45	0·1	575	—	0·75
ILE3	**AMPLIFIER TRIODE**	A.F. Amplifier	F	1·4	0·05	90 90	1·4 4·5	−3 0	— —	— —	760 1300	14·5 14·5	— —
ILG5	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90 90	3·7 1·7	−1·5 0	90 45	0·9 0·4	1150 800	— —	0·5 1·0
ILH4	**DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	F	1·4	0·05	90	0·15	0	—	—	275	65	0·24
ILN5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·6	0	90	0·35	800	—	1·1
IM3	**TUNING INDICATOR**	Tuning Indicator	F	1·4	0·025	90 See Note	See Note	See Note	—	—	—	—	—
IM5G	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·12	135	2·5	0	67·5	0·9	1000	—	0·8

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·4	Conversion Conductance = 10 μmhos at − 3 volts grid (G_4) bias. Grid No. 2 90 V. at 1·2 mA. Osc. Grid (G_1) Resistor 0·2 meg. Osc. Grid Current 0·035 mA. Osc. Gm = 550 μmhos.	29	F+	A	G_2	G_1	G_3 G_5	G_4	NC	F−	—	—	S	**ILA6**
12000	0·2	—	Total Harmonic Distortion 10%.	29	F+	A	G_2	IC	NC	G_1	NC	F− G_3	—	—	S	**ILB4**
—	—	0·007	Plate Current = 20 μA at − 2·5 volts grid bias.	29	F+	A	G_2	G_3	F− IS	G_1	NC	F− IS	—	—	S	**ILC5**
—	—	0·28	Conversion Conductance = 5 μmhos at − 3 volts grid (G_4) bias. Grid No .2 45 V. at 1·4 mA. Osc. Grid (G_1) Resistor 0·2 meg. Osc. Grid Current 0·035 mA. Osc. G_m = 550 μmhos.	29	F+	A	G_2	G_1	G_3 G_5	G_4	NC	F−	—	—	S	**ILC6**
—	—	0·18	Plate Current Cut-off at − 2·5 V. grid bias.	29	F+	A	G_2	D	NC	G_1	NC	F− G_3	—	—	S	**ILD5**
— —	— —	1·7		29	F+	A	NC	NC	IC	G_1	NC	F−	—	—	S	**ILE3**
— —	— —	0·007	Mutual Conductance = 10 μmhos at − 19 volts bias. Mutual Conductance = 10 μmhos at − 10 volts bias.	29	F+	A	G_2	G_3	F− IS	G_1	NC	F− IS	—	—	S	**ILG5**
—	—	—		29	F+	A	NC	D	NC	G_1	NC	F−	—	—	S	**ILH4**
—	—	0·007	Plate Current Cut-off at − 4·5 volts bias.	29	F+	A	G_2	G_3	F−	G_1	NC	F−	—	—	S	**ILN5**
—	—	—	Min. plate voltage for uniform illumination = 60 volts. Grid voltage for extinction − 10 V. Grid voltage for max. light 0 V. Plate current at zero grid voltage = 0·1 mA. Lead wires = 32 millimetres.	31	G_1	IC	NC	F	F	NC	NC	A	—	—	—	**1M3**
—	—	0·01	Mutual Conductance = 4 μmhos at − 16 volts bias.	30	NC	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**IM5G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
1N2	**HALF-WAVE VACUUM RECTIFIER**	TV E.H.T. Rectifier	F	1·25	0·2	Peak Inverse 28,000 (design max.)	Peak 50 (design max.) Average 0·5 (max.)	—	—	—	—	—	—
IN5G IN5GT IN5GT/G	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·2	0	90	0·3	750	—	1·5
IP5G IP5GT IP5GT/G	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	2·3	0	90	0·7	750	—	0·8
IQ5G IQ5GT IQ5GT/G	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	1·4	0·1	90 85	9·5 7·0	−4·5 −5·0	90 85	1·3 0·8	2200 1950	— —	0·075 0·07
IR5	**PENTAGRID**	Frequency Converter	F	1·4	0·05	90 67·5	1·6 1·4	0 (G_3) 0	67·5 (G_{3+4}) 67·5	3·2 3·2	300 Conv. 280	— —	0·6 0·5
1S2 1S2A	**HALF-WAVE VACUUM RECTIFIER**	E.H.T. Rectifier	H	1·4	0·55	Peak Inverse 22,000 (max.)	Peak 40 (max.) Average 0·5 (max.)	—	—	—	—	—	—
IS4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	90 67·5 45	7·4 7·2 3·8	−7 −7 −4·5	67·5 67·5 45	1·4 1·5 0·8	1575 1550 1250	— — —	0·1 0·1 0·1
IS5	**DIODE SHARP CUT-OFF PENTODE**	Detector A.F. Amplifier	F	1·4	0·05	90 67·5	2·7 1·6	0 0	90 67·5	0·5 0·4	720 625	— —	0·5 0·6
IT4	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90 67·5	3·5 3·4	0 0	67·5 67·5	1·4 1·5	900 875	— —	0·5 0·25
IT5GT	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	1·4	0·05	90	6·5	−6	90	0·8	1150	—	—
IT6	**DIODE SHARP CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	F	1·25	0·04	67·5	1·6	0	67·5	0·4	600	—	0·4
IU4	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	90	1·6	0	90	0·45	900	—	1·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	*May be connected to Pin No. 7 or to Corona Shield: otherwise do not use. Pins 4 and 6 may be used for Filament Resistor Tie Point.	30	IC *	F	IC *	—	IC *	NC	F	IC *	—	A	—	**1N2**
—	—	0·007	Mutual Conductance = 5 μmhos at − 4 volts bias.	30	S	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**IN5G IN5GT IN5GT/G**
—	—	0·007	Mutual Conductance = 10 μmhos at − 12 volts bias.	30	S	F+	A	G_2	NC	—	F−	NC	—	G_1	—	**IP5G IP5GT IP5GT/G**
8000 9000	0·27 0·25	—	Total Harmonic Distortion 6%. Total Harmonic Distortion 5·5%	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IQ5G IQ5GT IQ5GT/G**
— —	— —	0·4	Conversion Conductance = 5 μmhos at − 14 volts grid (G_3) bias. Osc. Grid (G_1) Current 0·25 mA. Osc. Grid Resistor 0·1 meg. Total Cathode Current 5·0 mA.	21	F− G_5	A	G_2 G_4	G_1	F− G_5	G_3	F+	—	—	—	—	**IR5**
—	—	—	Pins 1, 4, 6, 9 may be used for fixing an anti-corona ring. Type 1S2-A has a chemically treated envelope for use under humid conditions.	32	H K IS	H	IC	H K IS	H	H K IS	IC	H	H K IS	A	—	**1S2 1S2-A**
8000 5000 8000	0·27 0·18 0·065	—	Total Distortion 12%. Total Distortion 10%. Total Distortion 12%.	21	F− G_3	A	G_1	G_2	F− G_3	A	F+	—	—	—	—	**1S4**
— —	— —	0·4	Mutual Conductance = 10 μmhos at − 5 volts grid bias. (Vb=67·5) As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 1·0 meg. Screen Resistor 3·1 meg. Grid Leak 10·0 meg. Gain = 56.	21	F− G_3	NC	D	G_2	A	G_1	F+	—	—	—	—	**1S5**
— —	— —	0·01	Mutual Conductance = 10 μmhos at − 16 volts bias.	21	G_3 F− IS	A	G_2	NC	G_3 F— IS	G_1	F+	—	—	—	—	**IT4**
14000	0·17	—	Total Distortion 7·5%.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**IT5GT**
—	—	—	Mutual Conductance = 25 μmhos at − 5 volts grid. bias.	31	A	NC	G_1	F− G_3	F+	D	NC	G_2	—	—	—	**IT6**
—	—	0·008	Mutual Conductance = 10 μmhos at − 4·5 volts bias.	21	F− G_3 IS	A	G_2	NC	F− G_3 IS	G_1	F+	—	—	—	—	**IU4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor*	Plate resistance Megohms
1U5	**DIODE SHARP CUT-OFF PENTODE**	Detector A.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
1V	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	6·3	0·3	Max. R.M.S. 325	D.C. Output 45	—	—	—	—	—	—
1V2	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	F	0·625	0·3	Peak Inverse 7500	Peak 10·0 Average 0·5	—	—	—	—	—	—
1X2-A	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	F	1·25	0·2	Peak† Inverse 18000 (max.)	Peak 10 (max.) Average 1 (max.)	—	—	—	—	—	—
1X2-B	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	F	1·25	0·2	Peak Inverse 22000 (absolute) max.)	Peak 45 (max.) Average 0·5 (max.)	—	—	—	—	—	—
2A3	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	2·5	2·5	250	60·0	−4·5	—	—	5250	4·2	800 Ohms.
		Class "AB_1" Power Amplifier				300	Zero Signal 80·0 Max. Signal 100·0	See Note	—	—	—	—	—
2A5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	2·5	1·75	★	★	★	★	★	★	—	★
2A6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	2·5	0·8	★	★	★	—	—	★	★	★
2A7	**PENTAGRID**	Frequency Converter	H	2·5	0·8	★	★	★	★	★	★	—	★
2B7	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	2·5	0·8	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* 1S5.	21	F− G_3	A	G_2	D	NC	G_1	F+	—	—	—	—	**1U5**
—	—	—	With less than 40 μF condenser input to filter, minimum plate supply impedance = 75 Ω min. Greater supply impedances required for larger input capacities.	8	H	A	K	H	—	—	—	—	—	—	—	**1V**
—	—	—		32	IC	IC	IC	F	F	IC	IC	IC	A	—	—	**1V2**
—	—	—	*Pins 3 and 7 may be connected to one side of filament. Otherwise do not use. †Max. pulse duration 10 μsec.	32	F IS	F	* NC	F IS	F	F IS	* NC	F	F IS	A	—	**1X2—A**
—	—	—	*Do not use. The D.C. component of peak inverse plate voltage given must not exceed 18000 volts.	32	F IS	F	* NC	F IS	F	F IS	* NC	F	F IS	A	—	**1X2—B**
2500	3·5	16·5	Second Harmonic Distortion 5%. For Self-biased Operation the Cathode Bias Resistor should be 750 Ω.	8	F	A	G_1	F	—	—	—	—	—	—	—	**2A3**
Plate to Plate 5000	10·0		Values are for two tubes. Peak A.F. Grid to Grid voltage = 156 volts. Cathode Bias Resistor 780 Ω. Total Harmonic Distortion 5%.													
★	★	—	★ *For data and notes refer type* 6F6G. *For replacement consider also type* 42.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**2A5**
—	—	1·7	★ *For data and notes refer type* 6SQ7GT. *For replacement consider also types* 6B6G *and* 75.	17	H	A	D_2	D_1	K	H	—	—	—	G_1	—	**2A6**
—	—	0·3	★ *For data and notes refer type* 6A8. *For replacement consider also type* 6A7.	19	H	A	G_3 G_5	G_2	G_1	K	H	—	—	G_4	—	**2A7**
—	—	0·007	★ *For data and notes refer type* 6B8G. *For replacement consider also type* 6B7.	19	H	A	G_2	D_2	D_1	K G_3	H	—	—	G_1	—	**2B7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
2D21	**GAS-FILLED TETRODE**	Thyratron	H	6·3	0·6	117 R.M.S. 400	— —	R.M.S. 5·0 — 6	0 0	— —	— —	— —	— —
2E5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	2·5	0·8	★	★	★	—	—	—	—	—
2V3G	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	F	2·5	5·0	Peak Inverse 16500	Peak 12·0 Average 2·0	—	—	—	—	—	—
2X2 / 879	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	2·5	1·75	Peak Inverse 12500	Peak 60·0 Average 7·5	—	—	—	—	—	—
2X2A	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	2·5	1·75	Peak Inverse 12500	Peak 60·0 Average 7·5	—	—	—	—	—	—
3A2	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	H	3·15	0·22	Peak Inverse 18000 (max.)	Peak 80 (max.) Average 1·5 (max.)	—	—	—	—	—	—
3A3	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	H	3·15	0·22	Peak Inverse 30000 (max.)	Peak 80 (max.) Average 1·5 (max.)	—	—	—	—	—	—
3A4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·8 1·4	0·1 0·2	150 135	13·3 14·8	−8·4 −7·5	90 90	2·2 2·6	1900 1900	— —	0·1 0·09
3A5	**H.F. TWIN TRIODE**	Class "C" R.F. Power Amplifier	F	2·8 1·4	0·11 0·22	135	30·0	−20	—	—	—	—	—
3A8GT	**DIODE TRIODE R.F. PENTODE**	Detector A.F. Amplifier, R.F. Amplifier	F	2·8 1·4	0·05 0·1	90 90	0·2 1·5	0 0	— 90	— 0·5	325 750	65 —	0·2 0·8

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	—	Minimum Anode Circuit Resistance 1200 Ω and 2000 Ω respectively. Cathode Current: Peak 0·5 A. max. Average 0·1 A. max.	21	G_1	K	H	H	G_2	A	G_2	—	—	—	—	**2D21**
—	—	—	★ *For data and notes refer type* 6E5.	17	H	A	G_1^{t}	T	K	H	—	—	—	—	—	**2E5**
—	—	—	*For use with Cathode Ray Tubes.*	30	NC	F	NC	—	NC	—	F	NC	—	A	—	**2V3G**
—	—	—	*Replace with* 2X2A.	8	H	NC	NC	H K	—	—	—	—	—	A	—	**2X2 / 879**
—	—	—	*For use with Cathode Ray Tubes.* R.M.S. Plate Volts 4500.	8	H	NC	NC	H K	—	—	—	—	—	A	—	**2X2A**
—	—	—	*Do not use.	32	H K IS	H	* NC	H K IS	H	H K IS	* NC	H	H K IS	A	—	**3A2**
—	—	—	*Do not use.	30	* IC	H	* IC	—	* IC	—	H K IS	* IC	—	A	—	**3A3**
8000 8000	0·7 0·6	0·34	Series Filaments between pins 1 and 7. Parallel Filaments between pin 5 and 1, 7 tied together.	21	F−	A	G_2	G_1	F_t G_3	A	F+	—	—	—	—	**3A4**
—	2·0	3·2	Peak R.F. Grid to Grid V. = 90. D.C. Grid Current 5·0 mA. Driving Power 0·2 watt. Values for both units in push-pull at 40 megacycles.	21	F−	A''	G_1''	F_t	G_1'	A'	F+	—	—	—	—	**3A5**
— —	— —	2·0 0·012	Triode Unit. Pentode Unit.	30	F_t G_3^{p} IS	F+	A^{p}	G_2^{p}	G_1^{t}	A^{t}	F−	D	—	G_1^{p}	—	**3A8GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
3B2	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	H	3·15	0·22	Peak Inverse 35000 (absolute max.)	Peak 80 (max.) Average 1·1 (max.)	—	—	—	—	—	—
3C4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·05 0·025	85	5·0	−5·2	85	1·0	1400	—	—
3LF4	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	2·8 1·4	0·05 0·1	★	★	★	★	★	★	—	★
3Q4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·8 1·4	0·05 0·1	★	★	★	★	★	★	—	★
3Q5G 3Q5GT 3Q5GT/G	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	2·8	0·05	110	8·5	−6·6	110	1·1	2000	—	0·11
						90	8·0	−4·5	90	1·0	2000	—	0·08
				1·4	0·1	110	10·0	−6·6	110	1·4	2200	—	0·1
						90	9·5	−4·5	90	1·3	2200	—	0·09
3S4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·8	0·05	67·5	6·0	−7·0	67·5	1·2	1400	—	0·1
						90	6·1	−7·0	67·5	1·1	1425	—	0·1
				1·4	0·1	67·5	7·2	−7·0	67·5	1·5	1550	—	0·1
						90	7·4	−7·0	67·5	1·4	1575	—	0·1

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	*Do not use. To aid in corona reduction:— Pins 1, 3, 5, 7 may be connected together. Pins 2, 6, 8 may be connected together. Pin 4 may be used as a high potential tie point, or may be connected to either pin 2 or pin 7.	30	* IC	H	* IC	NC	* IC	* IC	H K IS	* IC	—	A	—	**3B2**
14,000	0·2	—		21	F−	A	G_2	NC	F_t G_3	G_1	F+	—	—	—	—	**3C4**
★	★	—	★ *For data and notes, except filament base pin numbering, refer type* 3Q5GT.	29	F+	A	G_2	NC	NC	G_1	F_t G_3	F−	—	—	S	**3LF4**
★	★	—	★ *For data and notes refer type* 3V4.	21	F−	A	G_1	G_2	F_t G_3	A	F+	—	—	—	—	**3Q4**
8000 8000	0·33 0·23	0·6	Filament Voltage applied across the two sections in series between pins 2 and 7. Grid Voltage referred to pin 7. Total Harmonic Distortion 8·5% in each case.	30	NC	F+	A	G_2	G_1	—	F−	F_t G_3	—	—	—	**3Q5G** **3Q5GT** **3Q5GT/G**
8000 8000	0·4 0·27		Filament Voltage applied across the two sections in parallel between pins 8 and 2, 7 tied together. Grid Voltage referred to pin 8. Total Harmonic Distortion 6% in each case.													
5000 8000	0·16* 0·235†	0·4	Filament Voltage applied across the two sections in series between pins 1 and 7. Grid Voltage referred to pin 1. *Total Harmonic Distort. 12%. †Total Harmonic Distort. 13%.	21	F−	A	G_1	G_2	F_t G_3	A	F+	—	—	—	—	**3S4**
5000 8000	0·18* 0·27†		Filament Voltage applied across the two sections in parallel between pin 5 and 1, 7 tied together. Grid Voltage referred to pin 5. *Total Harmonic Distort. 10%. †Total Harmonic Distort. 12%.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
3V4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·8	0·05	90	7·7	−4·5	90	1·7	2000	—	0·12
				1·4	0·1	85	6·9	−5·0	85	1·5	1975	—	0·12
						90	9·5	−4·5	90	2·1	2150	—	0·1
4AU6	**SHARP CUTOFF R.F. PENTODE**	R.F., A.F. Amplifier	H	4·2	0·45	★	★	★	★	★	★	—	★
4CB6	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	4·2	0·45	★	★	★	★	★	★	—	★
4CM4	**HIGH SLOPE U.H.F. TRIODE**	U.H.F. Amplifier	H	3·8	0·3	★	★	★	—	—	★	★	—
4DT6	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	4·2	0·45	★	★	★	★	★	★	—	★
5AR4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	1·9	R.M.S. 2×550 (max.) 2×450 2×350	Full-load D.C. Output 160 250 (max.) 250 (max.)	—	—	—	—	—	—
5AS4 5AS4A	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	R.M.S. 2×550 (max.) 2×450 2×300	Full-load D.C. Output 162 275 300	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
10000	0·24	0·2	Filament Voltage applied across the two sections in series between pins 1 and 7. Grid Voltage referred to pin 1. Total Harmonic Distortion 7%.	21	F−	A	G_2	NC	F_t G_3	G_1	F+	—	—	—	—	**3V4**
10000 10000	0·25* 0·27†		Filament Voltage applied across the two sections in parallel between pin 5 and 1, 7 tied together. Grid Voltage referred to pin 5. *Total Harmonic Distort. 10%. †Total Harmonic Distortion 7%.													
—	—	0·0035	Controlled Heater warm-up time = 11 secs. ★ *For data and notes refer type* 6AU6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**4AU6**
—	—	0·02	Controlled Heater warm-up time = 11 secs. ★ *For data and notes refer type* 6CB6.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**4CB6**
★	—	2·0	★ *For data and notes refer type* 6CM4.	32	A	G	K	H	H	G	K	G	A	—	—	**4CM4**
—	—	0·02	Controlled Heater warm-up time = 11 secs. ★ *For data and notes refer type* 6DT6.	21	G_1	K IS	H	H	A	G_2	G_3	—	—	—	—	**4DT6**
—	—	—	Capacitor Input to Filter 60 μF. (max.). Full-load D.C. Output Voltage at Input to Filter 640, 480, 380 respectively. Total Effective Plate Supply Impedance per Plate 200, 150, 100 ohms respectively.	30	IC	F	—	A_2	—	A_1	—	H K	—	—	—	**5AR4**
—	—	—	Capacitor Input to Filter 40 μF. Full-load D.C. Output Voltage at Input to Filter 630, 460, 290 respectively. Total Effective Plate Supply Impedance per Plate 97, 67, 21 ohms respectively. Greater Supply Impedance required for larger Input Capacities.	30	NC	F	—	A_2	—	A_1	—	F	—	—	—	**5AS4** **5AS4A**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
5AU4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·75	R.M.S. 2 × 500 (max.) 2 × 400 2 × 300	Full-load D.C. Output 210 325 350	—	—	—	—	—	—
5AZ4	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	F	5·0	2·0	R.M.S. 2 x 350	D.C. Output 125·0	—	—	—	—	—	—
5BQ7-A	**MEDIUM μ TWIN TRIODE**	R.F. Amplifier	H	5·6	0·45	★	★	★	—	—	★	★	★
5CU4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	3·5	R.M.S. 2 × 260	Full-load D.C. Output 385	—	—	—	—	—	—
5R4GY	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	Max. R.M.S. 2 x 750	D.C. Output 250·0	—	—	—	—	—	—
5T4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	Max. R.M.S. 2 x 450	D.C. Output 225·0	—	—	—	—	—	—
5U4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	R.M.S. 450 300	Full load D.C. Output 225 245	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate-capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Capacitor Input to Filter 40 μF. Full-load D.C. Output Voltage at Input to Filter 615, 395, 275 respectively. Total Effective Plate Supply Impedance per Plate 77, 50, 30 ohms respectively. Greater Supply Impedances required for larger input capacities.	30	NC	F	—	A_2	—	A_1	—	F	—	—	—	**5AU4**
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 50 Ω per plate. Greater supply impedances required for larger input capacities.	29	NC	F	NC	A'	NC	A''	NC	F	—	—	S	**5AZ4**
—	—	1·15	Controlled Heater warm-up time = 11 secs. ★ *For data and notes refer type* 6BQ7-A.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	IS	—	—	**5BQ7-A**
—	—	—	Capacitor Input to Filter 40 μF. Full-load D.C. Output Voltage at Input to Filter 300. Total Effective Plate Supply Impedance per Plate 30 ohms. Greater Supply Impedances required for Larger Input Capacities.	30	K	H	—	A_2	—	A_1	—	H	—	—	—	**5CU4**
—	—	—	Condenser Input to Filter = 4 μF.	30	NC	F	—	A''	—	A'	—	F	—	—	—	**5R4GY**
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 150 Ω per plate. Greater supply impedances required for larger input capacities.	30	S	F	—	A''	—	A'	—	F	—	—	—	**5T4**
—	—	—	Total Effective Plate Supply Impedance per plate 85, 35 Ω respectively. Filter Input Capacitor 40 μF. D.C. Output Voltage at Input to Filter 470, 290 volts.	30	NC	F	—	A'	—	A''	—	F	—	—	—	**5U4G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
5U4GB	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	R.M.S. 2×550 (max.) 2×450 2×300	Full-load D.C. Output 162 275 300	—	—	—	—	—	—
5V3	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·8	R.M.S. 2×500 (max.) 2×425 2×300	Full-load D.C. Output 220 350 380	—	—	—	—	—	—
5V4G **5V4GA**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	R.M.S. 2×375 (max.)	Full-load D.C. Output 175 (max.)	—	—	—	—	—	—
5W4 **5W4G** **5W4GT** **5W4GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	1·5	Max. R.M.S. 2 x 350	D.C. Output 100·0	—	—	—	—	—	—
5X4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	★	★	—	—	—	—	—	—
5Y3G **5Y3GT** **5Y3GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	R.M.S. 2×500 (max.) 2×350	Full-load D.C. Output 84 125	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Capacitor Input to Filter 40 μF. Full-load D.C. Output Voltage at Input to Filter 630, 460, 290 respectively. Total Effective Plate Supply Impedance per Plate 97, 67, 21 ohms respectively. Greater Supply Impedances required for Larger Input Capacities.	30	NC	F	—	A_2	—	A_1	—	F	—	—	—	**5U4GB**
—	—	—	Capacitor Input to Filter 40 μF. Full-load D.C. Output Voltage at Input to Filter 630, 430, 285 respectively. Total Effective Plate Supply Impedance per Plate 75, 56, 24 ohms respectively. Greater Supply Impedances required for Larger Input Capacities.	30	NC	F	—	A_2	—	A_1	—	F	—	—	—	**5V3**
—	—	—	Capacitor Input to Filter 10 μF. Full-load D.C. Output Voltage at Input to Filter 410. Total Effective Plate Supply impedance per Plate 100 ohms. Greater Supply Impedances required for Larger Input Capacities.	30	NC	H	—	A_2	—	A_1	—	H K	—	—	—	**5V4G** **5V4GA**
—	—	—	With less than 4 μF. condenser input to filter, minimum plate supply impedance = 50 Ω per plate. Greater supply impedances required for larger input capacities.	30	S	F	—	A''	—	A'	—	F	—	—	—	**5W4**
					NC	F	—	A''	—	A'	—	F	—	—	—	**5W4G** **5W4GT** **5W4GT/G**
—	—	—	★ *For data and notes refer type* 5U4G.	30	NC	NC	A''	NC	A'	NC	F	F	—	—	—	**5X4G**
—	—	—	Capacitor Input to Filter 10 μF. Full-load D.C. Output Voltage at Input to Filter 560, 350 respectively. Total Effective Plate Supply Impedance per Plate 140, 50 ohms respectively. Greater Supply Impedances required for Larger Input Capacities.	30	NC	F	—	A_2	—	A_1	—	F	—	—	—	**5Y3G** **5Y3GT** **5Y3GT/G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
5Y4G **5Y4GA** **5Y4GT**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	R.M.S. 2×500 (max.) 2×350	Full-load D.C. Output 84 125	—	—	—	—	—	—
5Z3	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	★	★	—	—	—	—	—	—
5Z4 **5Z4G** **5Z4GT** **5Z4GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	Max. R.M.S. 2 x 350	D.C. Output 125·0	—	—	—	—	—	—
6A3	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	6·3	1·0	Max. 250	60·0	−45	—	—	5250	4·2	800 Ohms.
		Class "AB_1" Power Amplifier				Max. 325	80·0 Zero Signal	See Note	—	—	—	—	—
6A4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	6·3	0·3	180	22·0	−12	180	3·9	2200	—	0·0455
6A6	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	H	6·3	0·8	★	★	★	—	—	—	—	—
6A7	**PENTAGRID**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
6A8 **6A8G** **6A8GT**	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250	3·5	(G_4) −3	(G_{3+5}) 100	2·7	Conv. 550	—	0·36
6AB4	**TRIODE**	R.F. Amplifier	H	6·3	0·15	100 170 200 250	3·0 8·5 11·5 10·0	−1 −1 −1 −2	— — — —	— — — —	3500 5500 6400 5000	58 66 66 60	— — — —

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Capacitor Input to Filter 10 μF. Full-load D.C. Output Voltage at Input to Filter 560, 350 respectively. Total Effective Plate Supply Impedance per Plate 140, 50 ohms respectively. Greater Supply Impedances required for Larger Input Capacities.	30	NC	NC	A_2	NC	A_1	NC	F	F	—	—	—	**5Y4G**, **5Y4GA**
					NC	NC	A_2	—	A_1	—	F	F	—	—	—	**5Y4GT**
—	—	—	★ *For data and notes refer type* 5U4G. *For replacement consider also type* 5X4G.	8	F	A'	A''	F	—	—	—	—	—	—	—	**5Z3**
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 50 Ω per plate. Greater supply impedances required for larger input capacities.	30	S	H	—	A''	—	A'	—	H K	—	—	—	**5Z4**
					NC	H	—	A''	—	A'	—	H K	—	—	—	**5Z4G**, **5Z4GT**, **5Z4GT/G**
2500	3·2	—	Second Harmonic Distortion 5%. For Self-biased Operation Cathode Bias Resistor should be 750 Ω.	8	F	A	G	F	—	—	—	—	—	—	—	**6A3**
5000 plate to plate	10·0	—	Cathode Bias Resistor 850 Ω. Total Harmonic Distortion 5%. Values are for two tubes.													
8000	1·4	—		15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**6A4**
★	★	—	★ *For data and notes refer type* 6N7.	20	H	A''	G_1''	K	G_1'	A'	H	—	—	—	—	**6A6**
—	—	0·3	★ *For data and notes refer type* 6A8.	19	H	A	G_3 G_5	G_2	G_1	K	H	—	—	G_4	—	**6A7**
—	—	0·06	Conversion Conductance = 6 μmhos at − 35 volts (G_4) bias. Grid No. 2 Current 4·0 mA. through 20,000 Ω (250 volt supply). Osc. Grid (G_1) Current 0·4 mA. Osc. Grid Resistor 50,000 Ω	30	S	H	A	G_3 G_5	G_1	G_2	H	K	—	G_4	—	**6A8**
		0·26			NC	H	A	G_3 G_5	G_1	G_2	H	K	—	G_4	—	**6A8G**
		0·26			S	H	A	G_3 G_5	G_1	G_2	H	K	—	G_4	—	**6A8GT**
—	—	1·5		21	A	IS	H	H	NC	G_1	K	—	—	—	—	**6AB4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6AB5 6AB5/ 6N5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·15	★	★	★	—	—	—	—	—
6AB7 6AB7/ 1853	**TELEVISION MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	300	12·5	−3	200	3·2	5000	—	0·7
6AB8	**MEDIUM μ TRIODE POWER OUTPUT PENTODE**	A.F. Amplifier (Triode Section)	H	6·3	0·3	100	8·0	0	—	—	1900	20	—
		Class "A" Power Amplifier (Pentode Section)				250	14·0	−12·2	†	2·6	2600	—	0·2
						170	15·0	−6·7	170	2·8	3200	—	0·15
		Pentode Sync. Pulse Sep.				Plate Voltage .. .. 20 Suppressor Grid (G_3) Voltage .. .. .. 0 Screen Grid (G_2) Voltage 12							
		Vertical Deflection Amplifier (Pentode Section)				D.C. Plate Voltage without current .. .. 550 max. with current .. .. 400 max. Peak Positive—Pulse Plate Voltage .. .. 1200 max. Peak Negative—Pulse Plate Voltage .. .. 500 max. D.C. Screen Grid Voltage without current .. 550 max. with current .. 250 max.							
6AC5G 6AC5GT 6AC5GT/G	**POWER OUTPUT TRIODE**	Dynamic Coupled Power Amplifier	H	6·3	0·4	250	Average 32·0	See Note	—	—	3400	125	0·0367
6AC7 / 1852	**TELEVISION SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	300	10·0	See Note	150	2·5	9000	—	1·0 Approx.
6AD4	**HIGH μ TRIODE**	A.F. Amplifier	H	6·3	0·15	100	1·4	See Note	—	—	2000	70	0·035
6AD7G	**TRIODE POWER OUTPUT PENTODE**	A.F. Amplifier, Class "A" Power Amplifier	H	6·3	0·85	250	4·0	−25	—	—	325	6	0·019
						250	34·0	−16·5	250	6·5	2500	—	0·08

TECHNICAL DATA

Load resist- ance Ohms	Power output Watts	Grid- plate capaci- tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	—	★ *For data and notes refer type* 6N5.	17	H	A^t	$G_1{}^t$	T	K	H	—	—	—	—	—	**6AB5** **6AB5/ 6N5**
—	—	0·015	Mutual Conductance = 50 μmhos at − 15 volts bias.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6AB7** **6AB7/ 1853**
—	—	0·9	As R.C. Amplifier (250V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Grid Bias − 5·5 volts. Plate Current 0·75 mA. Gain = 11·0.	32	A^t	$G_1{}^t$	K IS	H	H	A^p	$G_3{}^p$	$G_2{}^p$	$G_1{}^p$	—	—	**6AB8**
17500 11000	1·55 1·0	0·2	†Series screen resistor. 4700 Ω (250V. supply.) Total Harmonic Distortion 10% in each case.													
Control Grid G_1 Voltage .. .. .. −1·4 Plate Current .. .. 0·1mA																
Plate Dissipation .. .. .. 3·5 watts max. Screen Grid Dissipation .. .. 1·2 watts max. Cathode Current Peak .. .. 350 mA. max. Average .. .. 25 mA. max. Peak Heater Cathode Voltage .. 150 max.																
7000	3·7	—	With type 76 as driver, bias is developed in the coupling circuit.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**6AC5G** **6AC5GT** **6AC5GT/G**
—	—	0·015	Cathode Bias Resistor 160 Ω minimum. Plate Current Cut-off at − 5 volts grid bias.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6AC7** **/** **1852**
—	—	0·8	Cathode Resistor 820Ω. As R.C. Amplifier (250V. supply). Following grid resistor 0·47 mΩ. Plate resistor 0·27mΩ. Cathode resistor 2700Ω Gain 49	31	G_1	—	H	—	K	H	—	A	—	—	—	**6AD4**
— 7000	— 3·2	— —	Triode Unit (t). Pentode Unit (p). Total Harmonic Distortion 8%.	30	$G_1{}^t$	H	A^p	$G_2{}^p$	$G_1{}^p$	A^t	H	K	—	—	—	**6AD7G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6AD8	**DUO-DIODE MEDIUM CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·3	250	6·7	−2	85	2·3	1100	—	1·0
6AE5G 6AE5GT 6AE5GT/G	**AMPLIFIER TRIODE**	A.F. Amplifier	H	6·3	0·3	95	7·0	−15	—	—	120	4·2	3500 Ohms.
6AE8	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·3	250	3·5	(G_1h) −2	($G_{2+4}h$) 85	3·2	Conv. 750	—	1·5
6AF3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·2	Peak Inverse 4500 (Design max.)	Peak 750 (Design max.) Average 185 (Design max.)	—	—	—	—	—	—
6AF4-A	**MEDIUM μ U.H.F. TRIODE**	U.H.F. Amplifier	H	6·3	0·225	100	20	See Note	—	—	7500	16	2130 ohms
		U.H.F. Oscillator				100	22	−4*	—	—	—	—	—
6AF6G	**TUNING INDICATOR**	Twin Indicator	H	6·3	0·15	Target Volts 250	Target Current 2·2	—	—	—	—	—	—
6AG5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	7·0	See Note	150	2·0	5000	—	0·8
						100	5·5		100	1·6	4750	—	0·3
6AG6G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·2	250	32·0	−6	250	6·0	10000	—	0·06
6AG7	**POWER OUTPUT PENTODE**	Video Amplifier	H	6·3	0·65	300	30	−3	150	7·0	11000	—	0·13

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·002	Mutual Conductance = 10 μmhos at — 15 volts bias.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**6AD8**
—	—	—		30	NC	H	A	—	G_1	—	H	K	—	—	—	**6AE5G** **6AE5GT** **6AE5GT/G**
—	—	0·05	Osc. Plate current 4·5 mA. through. 30,000 Ω (250V. supply). Osc. Grid Resistor 30,000 Ω. Osc. Grid Current 0·8mA. Osc. G_m when not oscillating = 2800 μmhos. Conversion Conductance = 10 μmhos at — 25 volts grid G_1h bias.	32	G_2h G_4h	G_1h	K	H	H	Ah	G_1t G_3h	At	IC	—	—	**6AE8**
—	—	—	*Do not use as Tie Point. Design max. Peak Heater-Cathode voltage with Heater Negative with respect to Cathode 4500. Max, pulse duration 15% of a cycle. Controlled Heater warm-up time 11 secs.	32	* IC	* IC	* IC	H	H	* IC	* IC	* IC	A	K	—	**6AF3**
—	—	1·9	Cathode resistor 150Ω.	21	A	G_1	H	H	K	G_1	A	—	—	—	—	**6AF4—A**
—	0·16		*Grid voltage derived from 10000Ω grid resistor. D.C. grid current 400μA. Typical operating frequency 950Mc.													
—	—	—	Ray Control Electrode Voltage = approx. 160 and 0 volts for shadow angles of 0° and 95° respectively.	30	NC	H	G_1''	G_1'	T	—	H	K	—	—	—	**6AF6G**
— —	— —	0·025	Cathode Bias Resistor 200 Ω. I_a = 10 μA. for Grid V. = — 8. Cathode Bias Resistor 100 Ω. I_a = 10 μA. for Grid Volts = — 5.	21	G_1	K IS G_3	H	H	A	G_2	K IS G_3	—	—	—	—	**6AG5**
9000	3·75	—		30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**6AG6G**
10000	3·0	0·06	Total Harmonic Distortion 7%.	30	S	H	IS	G_1	K	G_2	H	A	—	—	—	**6AG7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6AH4-GT	**MEDIUM μ POWER TRIODE**	Class "A" Amplifier	H	6·3	0·75	250	30	−23	—	—	4500	8	1780 ohms
		TV Vertical Deflection Amplifier				D.C. Plate Voltage .. .. 500 max. Peak Positive—Pulse Plate Voltage .. .. 2000 max. D.C. Positive Grid Voltage .. .. .. 0 max. Peak Negative—Pulse Grid Voltage .. .. −200 max.							
6AH6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	300	10	See Note	150	2·5	9000	—	0·5
6AJ5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·175	28	2·7	−1·0	28	1·0	2500	—	0·1
6AJ8	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	250	3·25	−2·0	103 See Note	6·7	Conv. 775	—	1·0
6AK4	**REMOTE CUT-OFF U.H.F. TRIODE**	U.H.F. Amplifier	H	6·3	0·15	200	9·5	See Note	—	—	3800	20	5300 ohms
6AK5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·175	180	7·7	See Note	120	2·4	5100	—	0·69
6AK6	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·15	180	15	−9	180	2·5	2300	—	0·2
6AK8	**TRIPLE DIODE HIGH μ TRIODE**	Detector, A.F. Amplifier	H	6·3	0·48	250 100	1·0 0·8	−3 −1	— —	— —	1400 1450	70 70	0·05 0·048
6AL3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·5	Peak Inverse 6500 (max.)	Peak 550 (max.) Average 220 (max.)	—	—	—	—	—	—
6AL5	**TWIN DIODE**	Detector, Half-wave Rectifier	H	6·3	0·3	R.M.S. 150 per plate	Output Current 9·0 per plate	—	—	—	—	—	—
6AL7GT	**F.M. TUNING INDICATOR**	Tuning Indicator	H	6·3	0·15	Target Volts 315	—	See Note	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	4·4	Plate current = 0·5 mA. at −40 volts grid bias. Cathode current D.C. .. .. .. 60 mA. max. Peak .. .. .. 180 mA. max. Plate dissipation .. .. .. 7·5 watts max. Peak pulse heater cathode voltage .. 200 max. (D.C. component must not exceed .. 100 volts.)	30	G_1	H	NC	—	A	—	H	K	—	—	—	6AH4—GT
—	—	0·03	Plate current = 10 µA. for grid bias = − 7 volts. Cathode Resistor = 160 Ω.	21	G_1	G_3	H	H	A	G_2	K	—	—	—	—	6AH6
—	—	0·03	Plate current = 10µA. at −4·5 volts grid bias.	21	G_1	K G_3	H	H	A	G_2	K G_3	—	—	—	—	6AJ5
—	—	0·006	Conversion conductance = 7·75 µmhos at − 23·5 volts grid ($G_1{}^h$) bias. Osc. grid resistor 47,000 Ω. Osc. grid current 0·2 mA. Series screen resistor 22,000 Ω (250 V. supply).	32	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	IS K $G_5{}^h$	H	H	A^h	$G_3{}^h$	A^t	$G_1{}^t$	—	—	6AJ8
—	—	1·4	Cathode resistor 680Ω. Fixed bias operation not recommended. Plate current = 10µA. at −20 volts grid bias.	31	G_1	NC	H	NC	K	H	NC	A	—	—	—	6AK4
—	—	0·02	Plate Current Cut-off at − 7 volts grid bias. Cathode Bias Resistor = 200 Ω.	21	G_1	K IS G_3	H	H	A	G_2	K IS G_3	—	—	—	—	6AK5
10000	1·1	0·12	Suppressor Grid connected to Cathode at socket. Total Distortion 10%.	21	G_1	G_3	H	H	A	G_2	K	—	—	—	—	6AK6
— —	— —	2·0	Diode No. 1 is intended for A.M. detection and/or A.V.C. Diodes Nos. 2 and 3 are high perveance diodes for use in ratio detectors.	32	D_3	D_2	K_{d2}	H	H	D_1	IS K_t K_{d1} K_{d3}	G_{1t}	A_t	—	—	6AK8
			*Do not use as Tie Point. Max. Plate Dissipation 5 watts. Peak Heater-Cathode Voltage Heater Negative with respect to Cathode 6500 (absolute max.). Max. Pulse Duration 22% of a cycle with max. of 18 µsec.	32	IC *	IC *	IC *	H	H	IC *	IC *	IC *	A	K	—	6AL3
—	—	—	Minimum Total Plate Supply Impedance 300 Ω. The two units may be used separately or in parallel.	21	K'	A''	H	H	K''	IS	A'	—	—	—	—	6AL5
—	—	—	Cathode Bias Resistor = 3300 Ω. Deflection Sens. = 1mm./V.	30	G	H	T	DE''	DE'''	DE'	H	K	—	—	—	6AL7GT

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6AM4	**U.H.F. HIGH μ TRIODE**	Grounded Grid U.H.F. Amplifier	H	6·3	0·225	200	10·0	See Note	—	—	9800	85	8700
6AM5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	250	16·0	See Note	250	2·4	2600	—	0·13
6AM6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10·0	−2	250	2·55	7650	—	1·0
6AM8 **6AM8-A**	**DIODE SHARP CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·45	200	11·5	See Note	150	2·7	7000	—	0·6
6AN4	**U.H.F. HIGH μ TRIODE**	Grounded Grid U.H.F. Amplifier	H	6·3	0·225	200	13·0	See Note	—	—	10000	70	0·7
		U.H.F. Mixer				125	7	See Note	—	—	Conv. 2900	—	—
6AN7	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·23	250	3·0	(G_1h) −2·0	($G_{2+4}h$) See Note	3·0	Conv. 750	—	>1·0
6AN8 **6AN8A**	**MEDIUM μ TRIODE SHARP CUT-OFF R.F. PENTODE**	R.F. Pentode Amplifier	H	6·3	0·45	125	12·0	See Note	125	3·8	7800	—	0·17
		Triode Amplifier Section				150	15·0	−3	—	—	4500	21	4700 ohms
6AQ4	**R.F. TRIODE**	Grounded Grid Triode	H	6·3	0·30	250	10	−1·5	—	—	8500	100	0·012

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Cathode Resistor 100 Ω. Plate Current = 10 μA. at −6·5 volts grid bias.	32	G_1	K	G_1	G_1	A	G_1	H	H	G_1	—	—	**6AM4**
16000	1·4	0·5	Cathode Resistor 680 Ω. Total Distortion 10%.	21	G_1	K G_3	H	H	A	NC	G_2	—	—	—	—	**6AM5**
—	—	0·008	Plate Current Cut-off at − 5 volts grid bias.	21	G_1	K	H	H	A	G_3 IS	G_2	—	—	—	—	**6AM6**
—	—	0·015	Cathode resistor 120Ω. Plate current = 10μA. at −8 volts grid bias. Type 6AM8—A has controlled heater warm-up time = 11 secs.	32	K^p	G_1	G_2	H	H	A	K^d	D	G_3 IS	—	—	**6AM8** **6AM8—A**
—	—	—	Cathode resistor 100Ω. Plate current = 20μA. at −7 volts grid bias.	21	A	G_1	H	H	K	G_1	A	—	—	—	—	**6AN4**
—	—	—	Cathode resistor 270Ω. R.M.S. oscillator injection voltage = 1·4.													
—	—	0·1	Screen connected to junction of two resistors in series, each 27,000 Ω, connected between B + and ground. Osc. Plate Current 4·8 mA. through 33,000 Ω (250 volts supply). Osc. Grid Resistor 47,000 Ω. Osc. Grid Current 0·2 mA. Effective Osc. G_m = 550 μmhos. Osc. G_m when not oscillating = 2800 μmhos. Hexode Plate Current Cut-off at − 29 volts grid (G_1^h) bias.	32	G_2^h G_4^h	G_1^h	K IS	H	H	IC	A^h	A^t	G_3^h G_1^t	—	—	**6AN7**
—	—	0·04	Cathode Resistor 56 Ω. Plate Current = 20 μA. at −6 volts grid bias.	32	A^t	G_1^t	K^t	H	H	A^p	G_2	G_1^p	IS G_3 K_p	—	—	**6AN8** **6AN8A**
—	—	1·5	Plate Current = 20μA. at −17 volts grid bias. Type 6AN8A has Controlled Heater warm-up time = 11 secs.													
—	—		Cathode Resistor 150Ω. Maximum operating frequency 250 Mc.	21	G_1	K	H	H	K	G_1	A	—	—	—	—	**6AQ4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6AQ5 6AQ5A	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	0·45	250	Zero Signal 45·0 Max. Signal 47·0	−12·5	250	Zero Signal 4·5 Max. Signal 7·0	4100	—	0·052
		Class "AB$_1$" Power Amplifier				250	Zero Signal 70·0 Max. Signal 79·0	−15·0	250	Zero Signal 5·0 Max. Signal 13·0	—	—	—
		Vertical Deflection Amplifier (triode connected)				D.C. Plate Voltage .. .. 250 max. Peak-Positive-pulse Plate Voltage .. .. 1110 absol. max. Peak Negative Pulse Grid No. 1 Voltage .. 250 max.							
6AQ6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·15	100	0·8	−1	—	—	1150	70	0·061
						250	1·0	−3	—	—	1200	70	0·058
6AQ7GT	**DUO-DIODE HIGH μ TRIODE**	Detector, A.F. Amplifier	H	6·3	0·3	250	2·3	−2	—	—	1600	70	0·044
6AQ8	**HIGH μ TWIN TRIODE**	R.F. Amplifier	H	6·3	0·435	250	10·0	−2·0	—	—	6000	57	9700 ohms
		Self Oscillating Mixer				250	5·2	—	—	—	Conv. 2300	—	0·022
6AR5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	250	32·0	−18	250	5·5	2300	—	0·068
						250	34·0	−16·5	250	5·7	2400	—	0·065
6AR7GT	**DUO-DIODE MEDIUM CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·3	250	7·0	−2	100	1·8	2500	—	1·0
6AS5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·8	150	35·0	−8·5	110	2·0	5600	—	—
6AS6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·175	120	5·2	−2 (G_1)	120	3·5	3200	—	0·15
						120	3·6	−2	120	4·8	1850	—	—
6AS7G	**TWIN POWER OUTPUT TRIODE**	D.C. Amplifier	H	6·3	2·5	135	125	See Note	—	—	7000	2	280 Ohms.

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
5000	4·5	0·35	Total Harmonic Distortion 8%. Type 6AQ5A has Controlled Heater warm-up time = 11 secs.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**6AQ5** **6AQ5A**
10,000 Plate to Plate	10·0		Peak A.F. Grid to Grid Voltage = 30. Total Harmonic Distortion 5%.													
Cathode Current Peak 105 mA. max. Average 35 mA. max. Plate Dissipation 9 watts max. Peak Heater-Cathode Voltage 200 max. (D.C. component must not exceed 100 volts.)																
— —	— —	1·8	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6AQ6**
—	—	3·0	K^d provides the stream for Diode Plates D_1 and D_2. K^t provides the stream for the Triode Unit.	30	D_2	K^d	D_1	$G_1{}^t$	A^t	K^t	H	H	—	—	—	**6AQ7GT**
—	—	1·5	Plate Resistor 1800 Ω. Cathode Resistor 200 Ω.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	IS	—	—	**6AQ8**
—	—		Plate Resistor 12000 Ω. Grid Resistor 1mΩ. R.M.S. Oscillator Voltage 3·0													
7600 7000	3·4 3·2	—	Total Distortion 11%. Total Distortion 7%.	21	G_1	K G_3	H	H	A	G_2	NC		—	—	—	**6AR5**
—	—	0·003	Mutual Conductance = 20 μmhos at − 25 volts grid bias.	30	H	IS	A	G_2	D_2	D_1	G_3 K	H	—	G_1	—	**6AR7GT**
4500	2·2	0·6	Total Harmonic Distort. 10%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**6AS5**
— —	— —	0·025	Grid No. 3 voltage = 0. I_a = 100 μA at − 10 volts grid (G_1) bias. I_a = 20 μA at − 15 volts grid (G_3) bias. Grid No. 3 Voltage − 3 volts.	21	G_1	K	H	H	A	G_2	G_3	—	—	—	—	**6AS6**
—	—	—	Cathode Resistor 250 Ω values for each unit.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**6AS7G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage	Current	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
				Volts	Amps								
6AS8	**DIODE SHARP CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·45	200	9·5	See Note	150	3·0	6200	—	0·30
6AT6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	1·0	−3	—	—	1200	70	0·058
						100	0·8	−1	—	—	1300	70	0·054
6AT8 **6AT8A**	**MEDIUM μ TRIODE SHARP CUT-OFF PENTODE**	Pentode R.F. Amplifier	H	6·3	0·45	250	7·7	See Note	150	1·6	4600	—	0·75
		Triode Class "A" Amplifier				100	8·5	See Note	—	—	5800	40	6900 ohms
		Frequency Converter Pentode Mixer				150	6·2	−3·5	150	1·8	Conv. 2100	—	—
		Triode Oscillator				150	13	—	—	—	—	—	—
6AU4–GT	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·8	Peak Inverse 4500 (Absolute max.)	Peak 1050 (max.) Average 175 (max.)	—	—	—	—	—	—
6AU4–GTA	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·8	Peak Inverse 4500 (Absolute max.)	Peak 1150 (max.) Average 190 (max.)	—	—	—	—	—	—
6AU5-GT	**BEAM POWER PENTODE**	Class "A" Amplifier	H	6·3	1·25	115	60	−20	175	6·8	5800	—	6000 ohms
		Horizontal Deflection Amplifier				D.C. Plate Supply Voltage .. .. .. 550 max. Peak Positive Pulse Plate Voltage .. .. 5500 absol. max. Peak Negative Pulse Plate Voltage .. .. 1250 max. Plate Dissipation .... 10 max. watts							

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·04	Cathode Resistor 180Ω. Plate Current = 10µA. at −8 volts grid bias.	32	G_2	G_1	K^p	H	H	D	G_3 IS	K^d	A	—	—	**6AS8**
— —	— —	2·1	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6AT6**
—	—	0·025 max.	Cathode Resistor 200 Ω. Plate Current = 10 µA. at −10 volts grid bias.	32	$G_1{}^t$	A^t	K	H	H	A^p	G_2	G_3	$G_1{}^p$	—	—	**6AT8** **6AT8A**
—	—	1·5	Cathode Resistor 100 Ω. Plate Current = 10 µA. at −10 volts grid bias.													
— —	— 0·5	—	R.M.S. Oscillator Voltage at Mixer Grid (G_1) = 2·6. Mixer Grid (G_1) Resistor 0·12 MΩ. Oscillator Grid Resistor 2700 Ω. Oscillator Grid Current 3·6 mA. Max. operating frequency of oscillator 250 Mc. Type 6AT8A has Controlled Heater warm-up time = 11 secs.													
—	—	—	*No connection. Do not use. Max. plate dissipation 6 watts. Peak Heater—cathode voltage with heater negative with respect to cathode 4500. (Absolute maximum.)	30	NC *	NC *	K	—	A	—	H	H	—	—	—	**6AU4–GT**
—	—	—	*No connection. Do not use. Other ratings same as for type 6AU4-GT.	30	NC *	NC *	K	—	A	—	H	H	—	—	—	**6AU4–GTA**
—	—	0·5	Plate Current = 1 mA. at −45 volts grid (G_1) bias.	30	G_1	H	K G_3	—	A	—	H	G_2	—	—	—	**6AU5-GT**
			Peak Negative Pulse Grid (G_1) Voltage 300 max. D.C. Screen Grid Voltage .. .. 200 max. Screen Grid Dissipation .. .. 2·5 watts max. Peak Heater Cathode Voltage .. 200 max.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	 Volt-age Volts	 Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance μmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
6AU6 **6AU6A**	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·3	250	10·6	See Note	150	4·3	5200	—	1·0
						100	5·0	See Note	100	2·1	3900	—	0·5
6AU8	**MEDIUM μ TRIODE SHARP CUT-OFF R.F. PENTODE**	Pentode R.F. Amplifier	H	6·3	0·6	200	15	See Note	125	3·4	7000	—	0·15
		Triode Class "A" Amplifier				150	9	See Note	—	—	4900	40	8200 ohms
6AV5-GT **6AV5-GA**	**BEAM POWER TETRODE**	Class "A_1" Amplifier	H	6·3	1·2	250	55	−22·5	150	2·1	5500	—	0·02
		T.V. Horizontal Deflection Amplifier				D.C. Plate Voltage .. .. .. 550 max. Peak Positive—Pulse Plate Voltage .. 5500 absolute max. Peak Negative—Pulse Plate Voltage .. 1250 max. D.C. Screen Voltage .. .. .. 175 max. Peak Negative—Pulse Grid Voltage .. 300 max.							
6AV6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	100	0·5	−1	—	—	1250	100	0·08
						250	1·2	−2	—	—	1600	100	0·0625
6AW8 **6AW8A**	**HIGH μ TRIODE SHARP CUT-OFF R.F. PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·6	200	13	See Note	150	3·5	9000	—	0·4
		Triode Class "A" Amplifier				200	4·0	−2·0	—	—	4000	70	0·0175
6AX4-GT	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·2	Peak Inverse 4400 (absol. max.)	Peak 825 (max.) Average 137 (max.)	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	0·0035	Cathode Resistor 68, 150 ohms respectively. Grid No. 3 connected to Cathode at Socket. Plate Current = 10 μA at −6·5 volts and −4·2 volts grid bias respectively. As R.C. Amplifier (300 V. supply). Following Grid Resistor 1MΩ. Plate Resistor 0·47 MΩ. Grid No. 2 Resistor 1·1 MΩ. Cathode Resistor 1900 Ω. Gain = 318. Type 6AU6A has Controlled Heater warm-up time = 11 secs.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**6AU6** **6AU6A**
—	—	0·044	Cathode Resistor 82Ω. Plate Current = 100μA. at −8 volts grid bias.	32	K^t	$G_1{}^t$	A^t	H	H	K^p G_3 IS	$G_1{}^p$	G_2	A^p	—	—	**6AU8**
—	—	2·2	Cathode Resistor 150Ω. Plate Current = 100μA. at −6·5 volts grid bias. Controlled Heater warm-up time = 11 secs.													
—	—	0·7 0·5	Plate Current = 1 mA. at −46 volts grid bias.	30	G_1	H	K G_3	—	A	—	H	G_2	—	—	—	**6AV5-GT** **6AV5-GA**
Cathode Current Peak .. .. 400 mA. max. D.C. .. .. 110 mA. max. Plate Dissipation .. .. .. 11 watts max. Peak Heater—cathode voltage .. 200 max. (D.C. component must not exceed 100 volts.)																
— —	— —	—	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·47 meg. Cathode Resistor = 5200 Ω. Gain = 73.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6AV6**
—	—	0·036 6AW8 0·04 6AW8A	Cathode Resistor 180 Ω. Type 6AW8A has Controlled Heater warm-up time approx. 11 secs. Pentode for use as TV Video Amplifier. Triode for use as Sync. Separator, etc.	32	K^t	$G_1{}^t$	A^t	H	H	K^p G_3 IS	$G_1{}^p$	$G_2{}^p$	A^p	—	—	**6AW8** **6AW8A**
—	—	2·2														
—	—	—	*Do not use. Peak Heater Cathode Voltage with Heater Negative to Cathode 4400 absolute max. Max. Voltage Pulse Duration 15% of one Horizontal Scanning Cycle.	30	—	* NC	K	—	A	—	H	H	—	—	—	**6AX4-GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6AX4-GTB	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·2	Peak Inverse 5000 (design max.)	Peak 1000 (design max.) Average 165 (design max.)	—	—	—	—	—	—
6AX5GT	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	1·2	R.M.S. 2 x 350 2 x 450	D.C. Output 125·0 80·0	— —	— —	— —	— —	— —	— —
6AX8	**MEDIUM μ TRIODE SEMI-REMOTE CUT-OFF R.F. PENTODE**	Pentode R.F. Amplifier	H	6·3	0·45	250	10	See Note	110	3·5	4800	—	0·4
		Triode Section Class "A" Amplifier				150	18	See Note	—	—	8500	40	0·005
6AZ8	**MEDIUM μ TRIODE SEMI-REMOTE CUT-OFF R.F. PENTODE**	Pentode R.F. Amplifier	H	6·3	0·45	200	9·5	See Note	150	3·0	6000	—	0·3
		Triode Section Class "A" Amplifier				200	13·0	−6·0	—	—	3300	19	5750 ohms
6B4G	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	6·3	1·0	★	★	★	—	—	★	★	★
6B5	**DIRECT-COUPLED POWER OUTPUT TRIODE**	A.F. Amplifier and Class "A" Power Amplifier	H	6·3	0·8	★	★	★	—	—	★	★	★
6B6G	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
6B7	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	*Do not use. Peak Heater Cathode Voltage with Heater Negative to Cathode 5000 volts design maximum. Max. Voltage Pulse Duration 15% of one Horizontal Scanning Cycle.	30	—	* NC	K	—	A	—	H	H	—	—	—	**6AX4-GTB**
— —	— —	—	With less than 10 µF. condenser input to filter, minimum plate supply impedance per plate = 50 and 105 Ω respectively. Greater supply impedances required for larger input capacities.	30	NC	H	A^{II}	—	A^{I}	—	H	K	—	—	—	**6AX5GT**
—	—	0·006	Cathode Resistor 120Ω. Plate Current = 10µA. at −12 volts grid bias.	32	A^t	$G_1{}^p$	G_2	H	H	A^p	K^p G_3	K^t	$G_1{}^t$	—	—	**6AX8**
—	—	1·8	Cathode Resistor 56Ω. Plate Current = 10µA. at −12 volts grid bias. This type may be used for TV service with the pentode section as video amplifier and the triode section as sync. separator or amplifier.													
—	—	0·02	Cathode Resistor 180Ω. Mutual Conductance=10µmhos at −12·5 volts grid bias.	32	A^p	G_2	K^p	H	H G_3 IS *	$G_1{}^p$	K^t	A^t	$G_1{}^t$	—	—	**6AZ8**
—	—	1·7	Plate current = 10µA. at −19 volts grid bias. *Pin No. 5 must be earthed. This type may be used for TV service with the pentode section as video amplifier and the triode section as sync. amplifier.													
★	★	—	★ *For data and notes refer type* 6A3.	30	NC	F	A	NC	G_1	NC	F	NC	—	—	—	**6B4G**
★	★	—	★ *For data and notes refer type* 6N6G.	17	H	A^o	A^i	$G_1{}^i$	K	H	—	—	—	—	—	**6B5**
—	—	1·7	★ *For data and notes refer type* 6SQ7GT.	30	NC	H	A	D_2	D_1	—	H	K	—	G_1	—	**6B6G**
—	—	0·007	★ *For data and notes refer type* 6B8G.	19	H	A	G_2	D_2	D_1	K G_3	H	—	—	G_1	—	**6B7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6B7S	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
6B8	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	10·0	−3	125	2·3	1325	—	0·6
6B8G	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	9·0	−3	125	2·3	1125	—	0·6
6BA5	**SEMI-REMOTE CUT-OFF PENTODE**	Pentode Voltage Amplifier	H	6·3	0·15	100	5·5	See Note	100	2·0	2150	—	0·175
6BA6	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	11·0	See Note	100	4·2	4400	—	1·5
						100	10·8		100	4·4	4300	—	0·25
6BA7	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250	3·8	−1 (G_3)	100 (G_{2+4})	10·0	950 Conv.	—	1·0
						100	3·6	−1	100	10·2	900	—	0·5
6BA8 **6BA8A**	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·6	200	13	See Note	150	3·5	9000	—	0·4
		Triode Class "A" Amplifier				200	8·0	−8	—	—	2700	18	6700 ohms
6BC4	**U.H.F. MEDIUM µ TRIODE**	R.F. Amplifier	H	6·3	0·225	150	14·5	See Note	—	—	10000	48	4800 ohms

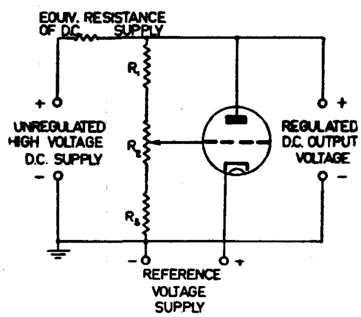
TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·007	★ *For data and notes refer type* 6G8G.	19	H	A	G_2	D_2	D_1	K G_3 IS	H	—	—	G_1	—	**6B7S**
—	—	0·005	*Refer to additional data and notes on* 6B8G. *These also apply to type* 6B8.	30	S	H	A	D_2	D_1	G_2	H	K	—	G_1	—	**6B8**
—	—	0·01	Plate Current Cut-off at − 21 volts grid bias. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·9 meg. Cathode Resistor 2500 Ω. Gain = 150.	30	NC	H	A	D_2	D_1	G_2	H	K G_3	—	G_1	—	**6B8G**
—	—	0·1	Cathode Resistor 270Ω. Plate Current = 10µA. at −13·5 volts grid bias. As R.C. Amplifier (150V. supply) Following Grid Resistor 0·47mΩ. Plate Resistor 0·1mΩ. Cathode Resistor 1000Ω. Gain 98.	31	G_1	NC	H	NC	A	H	G_2	K G_3	—	—	—	**6BA5**
— —	— —	0·0035	Suppressor Grid connected to Cathode at Socket. Cathode Resistor 68 Ω. Mutual Conductance = 40 µmhos at − 20 volts grid bias.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**6BA6**
— —	— —	0·19	Osc. Grid (G_1) Resistor = 20,000 Ω in each case. Osc. Grid Current 0·35 mA.	32	G_2 G_4	G_1	K	H	H	G_5 IS	G_3	IS	A	—	—	**6BA7**
—	—	0·04	Cathode Resistor 180 Ω. Plate Current = 10 µA. at −10 volts grid bias.													
—	—	2·2	Plate Current = 10 µA. at −16 volts grid bias. Type 6BA8A has Controlled Heater warm-up time = 11 secs. Pentode for use as TV Video Amplifier. Triode for use as Sync. Separator, etc.	32	K^t	G^t	A^t	H	H	K^p G_3 IS	$G_1{}^p$	G_2	A^p	—	—	**6BA8 6BA8A**
—	—	1·6	Cathode Resistor 100Ω. For use as R.F. Amplifier in cathode drive circuits of TV tuners covering the range 470—890 Mc.	32	A	G_1	G_1	H	H	K	G_1	G_1	A	—	—	**6BC4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6BC5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250 125	7·5 8·0	See Note See Note	150 125	2·1 2·4	5700 6100	— —	0·8 0·5
6BC7	**TRIPLE DIODE**	Rectifier	H	6·3	0·45	Peak Inverse 330 (max.)	Peak 54 (max.) Average 12 (max.)	—	—	—	—	—	—
6BC8	**SEMI-REMOTE CUT-OFF MEDIUM µ R.F. TWIN TRIODE**	R.F. Amplifier	H	6·3	0·4	150	10	See Note	—	—	6200	35	5830 ohms
6BD4-A	**SHARP CUT-OFF BEAM TRIODE High Voltage, Low Current Regulator Type**	Shunt Voltage Regulator Tube (In accompanying circuit)	H	6·3	0·6	UNREGULATED SUPPLY D.C. Voltage .. .. 29800 36300 Equivalent Resistance .. .. .. 8·0 8·0 mΩ. Voltage Divider Values R_1 5 watts 120 220 mΩ. R_2 2 watts 1 1 mΩ. R_3 ½ watts 2 3 mΩ. Reference Voltage Supply D.C. Value 500 500 Equivalent Resistance 1000 1000 Ω.							
6BD5-GT	**POWER PENTODE**	Horizontal Deflection Amplifier	H	6·3	0·9	Max. Plate Voltage .. .. 325 Max. Screen Voltage .. .. 325 Max. Plate Dissipation .. .. 10 watts Max. Screen Dissipation .. .. .. 3·0 watts Max. Cathode Current .. .. 100 mA.							
6BD6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250 125 100	9·0 13·0 13·0	−3 −3 −1	100 125 100	3·0 5·0 5·0	2000 2350 2550	— — —	0·8 0·18 0·15
6BD7	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·23	250	1·0	−3	—	—	1200	70	0·058

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	0·03	Cathode Resistor 180Ω and 100Ω respectively. Plate Current = 10µA. at −8, −6 V. grid bias respect. Useful at frequencies up to 400 Mc.	21	G_1	K G_3 IS	H	H	A	G_2	K G_3 IS	—	—	—	—	**6BC5**
—	—	—	Peak Heater cathode voltage 200 max. Minimum total effective plate supply impedance = 560Ω per plate.	32	K'''	D'''	IS	H	H	D''	K''	D'	K'	—	—	**6BC7**
—	—	1·4	Cathode Resistor 220Ω. Mutual Conductance = 50µmhos at −13 volts grid bias. For use in cascode type circuits of V.H.F. TV tuners.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	IS	—	—	**6BC8**
			Effective grid-plate transconductance 138 116µmhos. D.C. Plate Current: for load current of 0 mA. 1055 1035 µA. for load current of 1 mA. 100 100 µA. Regulated D.C. Output Voltage for load current of 0 mA. 20000 27000. for load current of 1 mA. 19700 26500.	30	K	H	NC	—	G_1	—	H	NC	—	A	—	**6BD4–A**



Shunt voltage regulator circuit

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
			Max. Peak-positive Surge Plate Voltage 4000 Max. Peak-negative Surge Grid Voltage 200 Max. Grid Circuit Resistance 1·0 mΩ. Max. Peak Cathode Current 300 mA. Max. Heater—Cathode Voltage 135	30	G_1	H	K G_3 IS	—	A	—	H	G_2	—	—	—	**6BD5–GT**
— — —	— — —	0·005	Mutual Conductance 10 µmhos at − 35 volts bias. at − 45 volts bias. at − 35 volts bias.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**6BD6**
—	—	1·3	As R.C. Amplifier (250 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·22 meg. Cathode Resistor = 1800 Ω. Gain = 51.	32	A	G_1	K	H	H	D_1	IS	D_2	IC	—	—	**6BD7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6BD7-A	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·23	250	1·0	−3·0	—	—	1200	70	0·058
6BE6	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250 100	3·0 2·8	−1·5 (G_3) −1·5	100 (G_{2+4}) 100	7·1 7·3	475 Conv. 455	— —	1·0 0·5
6BE7	**ENNEODE**	F.M. Detector and Limiter	H	6·3	0·2	Supply 250	0·28	See Note	20·0	1·5	—	—	5
6BE8	**MEDIUM μ TRIODE SHARP CUT-OFF R.F. PENTODE**	Pentode R.F. Amplifier	H	6·3	0·45	250	10	See Note	110	3·5	5200	—	0·4
		Triode Amplifier Class "A"				150	18	See Note	—	—	8500	40	0·005
6BF5	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	1·2	110	36	−7·5	110	4	7500	—	12000 ohms
6BF6	**DUO-DIODE TRIODE**	Detector and A.F. Amplifier	H	6·3	0·3	250	9·5	−9	—	—	1900	16	8500 Ohms.
6BF7	**MEDIUM μ TWIN TRIODE**	Class "A" Amplifier	H	6·3	0·30	100	8·0	See Note	—	—	4800	35	7000 ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·2	R.C. Amplifier (250 V. Supply). Following Grid Leak 1 mΩ. Plate Resistor 0·22 mΩ. Cathode Resistor 1800 Ω. Gain 51	32	A	G_1	K	H	H	D'	IS	D''	IC	—	—	**6BD7-A**
— —	— —	0·3	Osc. Grid (G_1) Resistor 20,000 Ω. Osc. Grid Current 0·5 mA. Conversion Conductance = 4 μmhos at − 30 volts Grid (G_3) Bias.	21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**6BE6**
—	—	—	Plate Load Resistor 0·47 meg. Pin 1 and pins 3 and 7 are connected to sections of a potentiometer between B + and B − consisting of:— R_1 = 34,000 Ω. R_2 = 3,900 Ω. R_3 = 560 Ω. R_1 is connected to B +. Pin 1 is connected to the junction of R_1 and R_2. Pins 3 and 7 tied together are connected to the junction of R_2 and R_3. Grids Nos. 3 and 5 R.M.S. Voltage = 12. Phase angle between R.M.S. voltages applied to Grids Nos. 3 and 5 = 90°.	32	G_2 G_4 G_6	G_3	K G_7	H	H	A	G_1	K G_7	G_5	—	—	**6BE7**
—	—	0·04	Cathode Resistor 68 Ω. Plate Current = 10 μA. at −10 volts grid bias.	32	$G_1{}^t$	A^t	K^t G_3 IS	H	H	A^p	G_2	K^p	$G_1{}^p$	—	—	**6BE8**
—	—	1·8	Cathode Resistor 56 Ω. Plate Current = 10 μA. at −12 volts grid bias. For use as V.H.F. Oscillator mixer.													
2500	1·9	0·65	Peak A.F. Grid Voltage 7·5 Max. Signal Plate Current 39 mA. Max. Signal Screen Current 10·5 mA. Total Harmonic Distortion 10%.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**6BF5**
10000	0·3	2·0	Distortion as Power Amplifier 6·5%. As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Cathode Resistor 13,000 Ω. Gain = 12.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**6BF6**
—	—	1·5	Cathode Resistor 100 Ω. Plate Current = 10 μA. at −7·5 volts grid bias.	31	A'	G_1'	H	K'	K''	H	G_1''	A''	—	—	—	**6BF7**

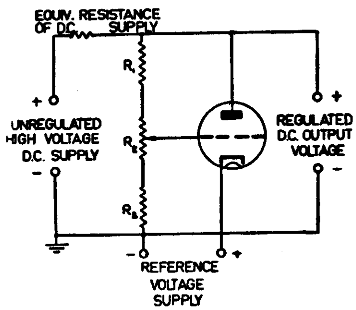
TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6BG6-G **6BG6-GA**	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	0·9	250	75·0	−15·0	250	4	6000	—	0·025
		Horizontal Deflection Amplifier				D.C. Plate Volts .. .. 700 max. Peak Positive—Pulse Plate Voltage .. 6600 absol. max. Peak Negative—Pulse Plate Voltage .. 1500 max. D.C. Screen Voltage .. .. 350 max.							
6BH5	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	6·0	−2·5	See Note	1·7	2200	—	1·0
6BH6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	7·4	−1	150	2·9	4600	—	1·4
						100	3·6	−1	100	1·4	3400	—	0·7
6BH8	**MEDIUM μ TRIODE SHARP CUT-OFF PENTODE**	Pentode Amplifier	H	6·3	0·6	200	15	See Note	125	3·4	7000	—	0·15
		Triode Amplifier				150	9·5	−5	—	—	3300	17	5150 ohms
6BJ5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·64	250	35·0	−5·0	250	5·5	—	—	—
6BJ6	**MEDIUM CUT-OFF PENTODE**	R.F. Amplifier	H	6·3	0·15	250	9·2	−1	100	3·3	3800	—	1·3
						100	9·0	−1	100	3·5	3650	—	0·25
6BJ7	**TRIPLE DIODE**	D.C. Restorer Service	H	6·3	0·45	Peak Inverse Plate Voltage .. .. .. 330 max. Peak Plate Current .. .. 10 mA. max. D.C. Output Current .. .. 1 mA. max.							
6BJ8	**DOUBLE DIODE MEDIUM μ TRIODE**	Class "A" Amplifier	H	6·3	0·6	90	13·5	0	—	—	4700	22	4700 ohms
						250	8	−9	—	—	2800	20	7150 ohms
		Vertical Deflection Amplifier				D.C. Plate Voltage .. .. 300 max. Peak Positive-Pulse Plate Voltage .. 1200 absolute max. Peak Negative-Pulse Grid Voltage .. 250 max. Plate Dissipation .. .. 3·5 watts max.							

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·34 6BG6G 0·8 6BG6GA	Plate Current = 1 mA. at −45 volts grid bias.	30	NC	H	K G_3	—	G_1	—	H	G_2	—	A	—	**6BG6-G** **6BG6-GA**
Peak Negative—Pulse Grid Voltage 300 max. Cathode Current Peak 400 mA, max. Average 110 mA, max. Plate Dissipation 20 watts max. Peak Heater Cathode Voltage 200 max. (D.C. component must not exceed 100 volts.)																
—	—	0·002	Series Screen Resistor 90,000 Ω (250 volts supply). Mutual Conductance = 22 µmhos at − 39 volts grid bias.	32	G_2	G_1	K G_3 IS	H	H	A	IC	IC	NC	—	—	**6BH5**
— —	— —	0·0035	Plate Current = 10 µA. at − 7·7 volts bias. Plate Current = 10 µA. at − 5 volts bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6BH6**
— —	— —	0·046 2·4	Cathode Resistor 82 Ω. Plate Current = 100 µA. at −8, −14 volts grid bias for pentode and triode respectively. Controlled Heater warm-up time = 11 seconds. For use as a TV video amplifier and triode sync. amplifier, separator.	32	K^t	$G_1{}^t$	A^t	H	H	K^p G_3 IS	$G_1{}^p$	G_2	A^p	—	—	**6BH8**
7000	4·0	0·3	Total Distortion 9·2.% The external grid circuit resistance should not exceed 0·25 meg. with auto. bias or 0·1 meg. with fixed bias.	21	G_1	K G_3	H	H	A	IC	G_2	—	—	—	—	**6BJ5**
— —	— —	0·0035	Mutual Conductance = 15 µmhos at − 20 volts bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6BJ6**
Peak Heater Cathode Voltage: Heater Negative to Cathode 330 max. Heater Positive to Cathode 100 max. Average Plate Current 10 mA. for Plate Volts = 2·7				32	K_3	A_3	IS	H	H	A_2	K_2	A_1	K_1	—	—	**6BJ7**
— —	— —	2·6	Plate Current = 10 µA. at −7, −18 volts grid bias respectively. Each Diode Unit: Peak Plate Current = 54 mA. max. D.C. Plate Current = 9 mA. max. Controlled Heater warm-up time = 11 secs.	32	D_2	K_{d2}	K_{d1}	H	H	D_1	A	G	K_t	—	—	**6BJ8**
Cathode Current Peak 70 mA. max. Average 20 mA. max. Peak Heater Cathode Voltage 200 max. (D.C. component 100 volts max.)																

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Volt-age Volts	Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
6BK4	**SHARP CUT-OFF BEAM TRIODE High Voltage Low Current Regulator Type**	Shunt Voltage Regulator Type (In Accom-panying Circuit.)	H	6·3	0·2	UNREGULATED SUPPLY. D.C. Voltage .. .. 36000 Equivalent Resistance .. .. 11 mΩ. Voltage Divider Values R_1 (5 watt) 220 mΩ. R_2 (2 watt) 1 mΩ. R_3 (½ watt) 82000 Ω. REFERENCE SUPPLY VOLTAGE D.C. Value .. .. 200 Equivalent Resistance .. .. .. 1000 Ω. D.C. Plate Current for load current of 0 mA. 1000 µA. for load current of 1 mA. 45 µA. Regulated D.C. Output Voltage for load current of 0 mA. 25000 for load current of 1 mA. 24500							
6BK5	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	1·2	250	35	−5	250	3·5	8500	—	0·1
6BK7-A 6BK7-B	**R.F. MEDIUM µ TWIN TRIODE**	R.F. Amplifier	H	6·3	0·45	150	18	See Note	—	—	9300	43	4600 ohms
6BK8	**SHARP CUTOFF A.F. PENTODE**	A.F. Amplifier (low noise)	H	6·3	0·2	250	3·0	−2·0	140	0·55	1850	—	2·5
6BL4	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	3·0	Peak Inverse 4500 (Abso-lute max.)	Peak 1200 (max.) Average 200 (max.)	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
			* Do not use.  Shunt voltage regulator circuit	30	K	H	IC *	IC *	G_1	IC *	H	IC *	—	A	—	**6BK4**
6500	3·5	0·6	Peak A.F. Grid Voltage 5. Max. Signal Plate Current 37 mA. Max. Signal Screen Current 10 mA. Total Harmonic Distortion 10%.	32	A	NC	G_1	H	H	K G_3	G_1	G_2	NC	—	—	**6BK5**
—	—	1·8	Cathode Resistor 56 Ω. Plate Current = 10 μA. at −11 volts grid bias. For use as a Cascode Amplifier below 300 Mc. Type 6BK7-B has Controlled Heater warm-up time = 11 secs.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	IS	—	—	**6BK7-A** **6BK7-B**
—	—	0·025	Plate Current = 0 at −5 volts grid bias. As R.C. Amplifier (250 V. supply). Following Grid Leak 0·68 mΩ. Plate Resistor 0·22 mΩ. Screen Resistor 1·0 mΩ. Cathode Resistor 2200 Ω. Gain 180	32	G_2	IS	K	H	H	A	IS	G_3	G_1	—	—	**6BK8**
—	—	—	* Do not use. Peak Heater to cathode voltage, with heater negative with respect to cathode, 4500 Absolute maximum.	30	IC *	IC *	K	IC *	A	IC *	H	H	—	—	—	**6BL4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6BL7-GT 6BL7-GTA	**MEDIUM μ TWIN TRIODE**	Class "A" Amplifier Each Section	H	6·3	1·5	250	40	−9·0	—	—	7000	15	2150 ohms
		Vertical Deflection Amplifier				D.C. Plate Voltage .. .. .. 500 max. Peak Positive-Pulse Plate Voltage .. 2000 absolute max. Peak Negative-Pulse Grid Voltage .. 250 max.							
6BL8	**MEDIUM μ TRIODE REMOTE CUT-OFF R.F. PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	170	10·0	−2·0	170	2·8	6200	—	0·4
		Triode Class "A" Amplifier				100	14·0	−2·0	—	—	5000	20	4000 ohms
		Frequency Converter				170	6·5	See Note	170	2·0	Conv. 2200	—	0·8
		Pentode Mixer				250	6·5	See Note	250	2·0	Conv. 2200	—	>0·5
		Triode Oscillator				100	7·5	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	6·0	Plate Current = 50 μA. at −23 volts grid bias.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**6BL7-GT** **6BL7-GTA**
			Cathode Current Peak 210 mA. max. Average 60 mA. max. Plate Dissipation 10 watts max. both plates 12 watts max. Peak Heater Cathode Voltage 200 max. (D.C. component must not exceed 100 volts). Type 6BL7GTA is capable of higher currents at lower voltages than type 6BL7GT.													
—	—	0·025	Input Resistance at 50 Mc. 10000 Ω. Equivalent Noise Resistance 1500 Ω.	32	A^t	$G_1{}^p$	G_2	H	H	A^p	K^p G_3 IS	K^t	$G_1{}^t$	—	—	**6BL8**
—	—	1·5														
— —	— —	— —	Cathode Resistor 330 Ω. Screen Resistor 0 and 39 kΩ, respectively. Grid Resistor 0·1 mΩ. R.M.S. Oscillator Voltage at grid ($G_1{}^p$) 3·5.													
—	—	—	Grid Resistor 22000 Ω. Grid Current 330 μamp. R.M.S. Oscillator Voltage 5·0													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6BM8	HIGH µ TRIODE POWER PENTODE	Pentode Class "A" Amplifier	H	6·3	0·76	170	41	−11·5	170	9	7500	—	0·016
		Triode Class "A" Amplifier				100	3·5	0	—	—	2200	70	—
		Pentode Class "A" Audio Amplifier				272	Zero Signal 28 Max. Signal 27	See Note	See Note	Zero Signal 6·5 Max. Signal 10·8	—	—	—
						200	Zero Signal 35 Max. Signal 37	See Note	See Note	Zero Signal 7·8 Max. Signal 13·3	—	—	—
		Pentode Class "AB" Audio Amplifier				250	Zero Signal 2×28 Max. Signal 2×31	See Note	200	Zero Signal 2×5·8 Max. Signal 2×13	—	—	—
		Vertical Deflection Amplifier (Pentode)				D.C. Plate Voltage .. .. .. 300 max. Peak Positive Pulse Plate Voltage 2500 max. Plate Dissipation .. .. .. 5 watts max. Grid No. 2 Voltage .. .. 300 max. Grid No. 2 Dissipation .. .. 2·0 watts max.							
		Vertical Deflection Oscillator (Triode)				D.C. Plate Voltage .. .. 300 max. Peak Positive Pulse Plate Voltage 600 max.							
6BN4 6BN4A	MEDIUM µ V.H.F. TRIODE	Class "A" Amplifier	H	6·3	0·2	Supply 150	9·0	See Note	—	—	6800 (6BN4) 8000 (6BN4A)	43	6300 (6BN4) 5400 (6BN4A)
6BN5	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	6·3	0·2	225	26·0	See Note	225	4·1	3200	—	0·09
		Class "AB" Power Amplifier				250	Zero Signal 2 x 20 Max. Signal 2 x 21·5	See Note	250	Zero Signal 2 x 3·2 Max. Signal 2 x 6·7	—	—	—
6BN6	GATED BEAM PENTODE	Limiter, Discriminator	H	6·3	0·3	80	0·23	See Note	60	5·0	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No,
—	—	0·3														
—	—	4·2	R.C. Amplifier (200 volt supply). Plate Load Resistor 0·22 MΩ. Cathode Resistor 2200 Ω. Following Grid Resistor 0·68 MΩ. Voltage Gain 52.													
8000	3·5		Cathode Resistor 650, 330 Ω respectively. Grid No. 2 Resistor 2200, 470 Ω respectively from a 272, 200 volt supply respectively. Total Harmonic Distortion 10%.													
4500	3·3			32	G_1^t	K^p G_2 IS	G_1^p	H	H	A^p	G_2	K^t	A^t	—	—	**6BM8**
10,000 Plate to Plate	10·5		Common Cathode Resistor 220 Ω. Total Harmonic Distortion 4·8%.													
Cathode Current 50 mA. max. Heater Cathode Voltage 150 max.																
Plate Dissipation 1 watt max. Cathode Current 15 mA. max. Peak Positive Pulse Cathode Current 100 mA. max.																
—	—	1·2	Cathode Resistor 220 Ω. Plate Current = 100 μA. at −6 volts grid bias. For use as V.H.F. Amplifier.	21	K	G_1	H	H	A	K	G_1	—	—	—	—	**6BN4** **6BN4A**
9000	2·8	0·2	Cathode bias resistor 360 Ω. Total harmonic distortion 12%. R.M.S. A.F. grid volts=8 volts.	32	G_1	G_1	K	H	H	G_3	A	G_3	G_2	—	—	**6BN5**
1500 Plate to Plate	7·0		Common cathode bias resistor 31 Ω. Total harmonic distortion 5·5%.													
0·068	—	—	Cathode Resistor approx. 300 Ω. For use in F.M. limiter discriminator circuits.	21	K IS	G_1	H	H	G_2	G_3	A	—	—	—	—	**6BN6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6BN8	**DOUBLE DIODE HIGH μ TRIODE**	Class "A" Amplifier	H	6·3	0·6	100	1·5	−1	—	—	3500	75	0·021
						250	1·6	−3	—	—	2500	70	0·028
6BQ5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·76	250	Zero Signal 48·0 Max. Signal 49·2	−7·3	250	Zero Signal 5·5 Max. Signal 11·6	11300	—	0·038
						250	Zero Signal 36·0 Max. Signal 36·6	−6·4	210	Zero Signal 3·9 Max. Signal 7·3	10400	—	0·04
		Class "AB" Power Amplifier				300	Zero Signal 2×36·0 Max. Signal 2×46·0	See Note	300	Zero Signal 2×4·0 Max. Signal 2×11·0	—	—	—
6BQ6–GT	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·2	250	55	−22·5	150	2·1	5500	—	0·02
		Horizontal Deflection Amplifier				550 Max.	—	—	175 Max.	—	—	—	—
6BQ6–GTB / 6CU6	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·2	250	65	−22·5	150	2·1	6000	—	0·018
		Horizontal Deflection Amplifier				D.C. Plate Voltage .. .. .. 600 max. Peak Positive—Pulse Plate Voltage .. 6000 absolute max. Peak Negative—Pulse Plate Voltage .. 1250 max. D.C. Screen Voltage .. .. .. 200 max. D.C. Grid Voltage .. .. .. −50 max.							
6BQ7-A	**MEDIUM μ R.F. TWIN TRIODE**	R.F. Amplifier	H	6·3	0·4	150	9·0	See Note	—	—	6400	39	6100 ohms
		Grounded Grid R.F. Amplifier				135	10·0	−1·0	—	—	—	—	—
						115	10·0	—	—	—	—	—	—
6BR5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 2·0	−1·0 for shadow angle of 5°.	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	2·5	Controlled Heater warm-up time = 11 secs. Plate Current = 10 µA. at −2·5, −5·5 volts grid bias respectively.	32	D_2	K_{d2}	K_{d1}	H	H	D_1	A	G	K_t	—	—	**6BN8**
5200	6·0	< 0·5	For each condition :— Cathode Resistor 135, 160 Ω. R.M.S. Input Voltage 4·7, 3·4 Output Power measured with fixed bias. Total Harmonic Distortion 11·7, 10%.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**6BQ5**
7000	4·3															
8000 Plate to Plate	17		Cathode Resistor 130 Ω. R.M.S. Input Voltage 2 × 10 Total Harmonic Distortion 4%													
—	—	0·6	Plate Current = 1 mA. at −46 volts grid bias.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**6BQ6–GT**
—	—		Peak Positive Pulse plate voltage 5500 absolute max. For other data and notes refer type 6BQ6—GTB.													
—	—	0·6	Plate Current = 1 mA. at −46 volts grid bias.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**6BQ6–GTB / 6CU6**
Peak Negative—Pulse Grid Voltage 300 max. Cathode Current Peak .. .. 400 mA. max. Average .. .. 112·5 mA. max. Plate Dissipation 11 watts max. Peak Heater Cathode Voltage 200 max. (D.C. component must not exceed 100 volts.)																
—	—	1·15	Cathode Resistor 220Ω. Plate Current = 10 µA. at −10 volts grid bias.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	IS	—	—	**6BQ7-A**
— —	— —		Supply Voltage 250. Unit 1 is the driver section. Plate Current = 10 µA. at −14 volts grid (G_1') bias.													
—	—	—	Triode Plate Resistor 0·5 mΩ. Shadow angle of 50° occurs at −16 volts grid (G_1^t) bias.	32	G_1^t	K G_1^t	IC	H	H	IC	A^t DE	IC	T	—	—	**6BR5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6BR7	**SHARP CUT-OFF PENTODE**	A.F. Amplifier (Low-noise non-microphonic low hum)	H	6·3	0·15	250	2·1	−3	100	0·6	1250	—	2·4
						100	2·0	−3	100	0·7	1100	—	1·5
6BR8 **6BR8A**	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	250	10	See Note	110	3·5	5200	—	0·4
		Triode Class "A" Amplifier				150	18	See Note	—	—	8500	40	5000 ohms
6BS4	**U.H.F. TRIODE**	U.H.F. Amplifier	H	6·3	0·225	100	16·0	−4·0	—	—	8000	15	—
		U.H.F. Oscillator				75	16·0	—	—	—	—	—	—
6BS7	**SHARP CUTOFF A.F. PENTODE**	Low noise Class "A" Pre-Amplifier	H	6·3	0·15	250	2·1	−3·0	100	0·6	1250	—	2·4
						100	2·0	−3·0	100	0·7	1100	—	1·5
6BS8	**R.F. MEDIUM µ TWIN TRIODE**	Class "A" Amplifier	H	6·3	0·4	150	10·0	See Note	—	—	7200	36	5000 ohms
6BT4	**FULL-WAVE RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	Max. R.M.S. 2×350	Max. D.C. Output 90	—	—	—	—	—	—
6BT8	**DOUBLE DIODE SHARP CUT-OFF R.F. PENTODE**	Class "A" Amplifier	H	6·3	0·45	200	9·5	See Note	150	2·8	6200	—	0·3

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	0·01	Mutual Conductance = 12·5 and 11·0 µmhos at − 9 V. and − 8 V. grid bias respectively. As R.C. Amplifier (300 V. supply). Following grid leak 1·0 meg. Screen resistor 2·8 meg. Cathode resistor 2200 Ω. Gain = 185.	32	NC	G_1	K	H	H	S	A	G_2	G_3	—	—	**6BR7**
—	—	0·015 max.	Cathode Resistor 68 Ω. Plate Current = 10 µA. at −10 volts grid bias.	32	G^t	A^t	K^t	H	H	A^p	G_2	K^p G_3 IS	$G_1{}^p$	—	—	**6BR8** **6BR8A**
—	—	1·8	Cathode Resistor 56 Ω. Plate Current = 10 µA. at −12 volts grid bias. Types 6BR8, 6BR8A are intended for use in mixer oscillator service. Type 6BR8-A has Controlled Heater warm-up time = 11 secs.													
—	—	1·7	Maximum frequency limit with holder is approximately 1400 Mc/s.	21	A	G_1	H	H	K	G_1	A	—	—	—	—	**6BS4**
—	—		Grid Resistor 10000 Ω. Grid Current 400 µA.													
—	—	0·01	Mutual Conductance = 12·5 µmhos at −9 volts grid (G_1) bias.	32	NC	NC	K	H	H	IS	A	G_2	G_3	G_1	—	**6BS7**
—	—		Mutual Conductance = 11 µmhos at −8 volts grid (G_1) bias. R.C. Amplifier (300 V. supply). Plate Resistor 0·47 mΩ. Cathode Resistor 2200 Ω. Series Screen Resistor 2·8 mΩ. Following Grid Leak 1·0 mΩ. Gain 185													
—	—	1·15	Cathode Resistor 220 Ω. Plate Current = 10 µA. at −7 volts grid bias. Useful up to 250 Mc/s.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	IS	—	—	**6BS8**
—	—	—	Capacitor Input to Filter 50 µF. max. Plate Supply Impedance per plate = 300 Ω min.	28	H	A'	—	IC	—	A''	K	H	—	—	—	**6BT4**
—	—	·04	Cathode Resistor 180 Ω. Plate Current = 10 µA. at −8 volts grid bias.	32	D_2	D_1	K_d	H	H	A	G_2	G_1	K^p G_3	—	—	**6BT8**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6BU8	**SHARP CUT-OFF TWIN PENTODE (WITH COMMON CATHODE, GRID No. 1, GRID No. 2)**	Class "A" Amplifier (Each unit with both units operating)	H	6·3	0·3	100	—	See Note G_3 −10	67·5	6·5	—	—	—
						100	2·2	G_3 0	67·5	3·3	—	—	—
		Each unit operating separately (plate and G_3 of other unit earthed)				100	—	0	67·5	—	G_1—A 1500	—	—
						100	2·2	See Note	67·5	—	G_3—A 180	—	—
6BV7	**DUO-DIODE POWER OUTPUT PENTODE**	Detector, Class "A" Power Amplifier	H	6·3	0·8	250	38	−5	250	6·0	10,000	—	0·1
						180	20	−4	180	3·5	8,000	—	0·13
6BW4	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	0·9	R.M.S. 2 × 325	D.C. Output 100	—	—	—	—	—	—
6BW6	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier and Class "AB_1" Power Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★
6BW7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	9·5	See Note	250	3·5	8500	—	0·75
6BW8	**DOUBLE DIODE SHARP CUT-OFF PENTODE**	Class "A" Amplifier	H	6·3	0·45	250	10	See Note	110	3·5	5200	—	0·25
6BX6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10·0	−2	See Note	2·4	7400	—	0·65
						200	10·0	−2·55	200	2·6	7100	—	0·55
						170	10·0	−2	170	2·5	7400	—	0·5

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	Grid No. 3 to plate (each unit) 1·9	G_1 Current adjusted for 100 μA. D.C.	32	K	G_2 IS	A''	H	H	G_3''	G_1	A'	G_3'	—	—	**6BU8**
— —	— —	Grid No. 1 to all other elec-trodes 6	G_1 Current adjusted for 100 μA. D.C. Intended for use in TV receivers as combined Sync.-Separator - noise limiter and A.G.C. valve.													
7000 7000	4·0 2·0	0·5	Total Harmonic Distortion 10% in each case.	32	D_1	A	G_2	H	H	D_2	K G_3	G_1	K G_3	—	—	**6BV7**
—	—	—	Capacitor Input to Filter = 40 μF. Total Effective Plate Supply Impedance per Plate = 82 Ω. Greater Supply Impedances for Larger Input Capacities.	32	A_2	NC	NC	H	H	NC	A_1	NC	K	—	—	**6BW4**
★	★	0·6	★ *For data and notes refer type* 6V6G.	32	IC	G_1	K	H	H	NC	A	G_2	BP	—	—	**6BW6**
—	—	0·01	Cathode Resistor 180 Ω. Equivalent Noise Resistance 920 Ω. Mutual Conductance = 85 μmhos at −8 volts grid bias.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**6BW7**
—	—	0·02	Cathode Resistor 68 Ω. Plate Current = 10 μA. at −10 volts grid bias. Maximum Average Diode Current (each unit) 5 mA.	32	D_2	K_d	D_1	H	H	G_1	G_3 IS K_p	G_2	A	—	—	**6BW8**
— — —	— — —	— 0·007 —	Series Screen Resistor 33 kΩ. Input Resistance at 50 Mc/s. (each case). 10000Ω, 12000Ω, 10000Ω. Plate Current Cutoff (each case) at −7·5, −6·2, −5·6 volts grid (G_1) bias.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**6BX6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6BX7-GT	**MEDIUM μ TWIN TRIODE**	Class "A" Amplifier	H	6·3	1·5	250	42·0	See Note	—	—	7600	10	1300 ohms
		Vertical Deflection Oscillator and Deflection Amplifier				D.C. Plate Voltage .. .. .. 500 max. For Use as Amplifier :— Peak Positive—Pulse Plate Voltage .. 2000 absolute max. Peak Negative—Pulse Grid Voltage .. 250 max. For Use as Oscillator :— Peak Negative Pulse Grid Voltage .. 400 max. Cathode Current Peak .. .. .. 180 mA. max. Average .. .. 60 mA. max.							
6BY5-GA	**FULL-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·6	Peak Inverse 3000 (Absolute (Max.)	Peak 525 (Max.) Average 175 (Max.)	—	—	—	—	—	—
6BY6	**PENTAGRID**	Class "A" Amplifier	H	6·3	0·3	250	6·5	(G_1) −2·5 (G_3) −2·5	(G_2+_4) 100	(G_2+_4) 9·0	(G_1-A) 1900 (G_3-A) 500	—	—
		Sync. Separator Sync. Clipper				10·0	1·4	(G_1) 0 (G_3) 0	25·0	3·5	—	—	—
6BY7	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10	−2	100	2·5	6000	—	0·5
6BY8	**DIODE SHARP CUT-OFF R.F. PENTODE**	Class "A" Amplifier	H	6·3	0·6	250 100	10·6 5·0	See Note See Note	150 100	4·3 2·1	5200 3900	—	1·0 0·5
6BZ6	**SEMI-REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	200	11·0	See Note	150	2·6	6100	—	0·6
6BZ7	**MEDIUM μ TWIN TRIODE**	Class "A" Amplifier	H	6·3	0·4	150	10·0	See Note	—	—	6800	38	5600 ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	4·2	Cathode Resistor 390 Ω. Plate Current = 50 µA. at −40 volts grid bias.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**6BX7-GT**
Plate Dissipation: either plate .. .. 10 watts max. both plates (both units operating) 12 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts).																
—	—	—	* Do not use. Peak Heater Cathode Voltage with heater negative with respect to cathode = 450 max.	30	K''	H	NC *	A''	A'	—	H	K'	—	—	—	**6BY5-GA**
—	—	G_1—A 0·08 G_3—A 0·35		21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**6BY6**
—	—	—	With plate voltage = 25, screen grid (G_{2+4}) voltage = 25:—plate current = 50 µA. at −2·5 volts grid No. 1 (G_1) bias with (G_3) voltage = 0. Plate Current = 50µA. at −2·3 volts grid No. 3 (G_3) bias with (G_1) voltage = 0.													
—	—	0·007	Mutual conductance = 60 µmhos at − 35 volts grid bias. Equivalent noise resistance 1500 Ω.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**6BY7**
—	—	·0035	Cathode Resistor 68 Ω, 150 Ω respectively. Plate Current = 10 µA. at −6·5, −4·2 volts grid bias respectively. Controlled Heater warm-up time = 11 secs.	32	G_1	G_3 IS	K_d	H	H	D	A	G_2	K_p	—	—	**6BY8**
—	—	0·02	Cathode Resistor 180 Ω. Mutual Conductance = 50 µmhos at −23 volts grid bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6BZ6**
—	—	1·15	Cathode Resistor 220 Ω. Plate Current = 10 µA. at −11 volts grid bias.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	IS	—	—	**6BZ7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	 Voltage Volts	 Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6BZ8	**SEMI REMOTE CUT-OFF MEDIUM μ TWIN TRIODE**	Class "A" R.F. Amplifier (Each Unit)	H	6·3	0·4	125	10	See Note	—	—	8000	45	5600 ohms
6C4	**V.H.F. POWER TRIODE**	A.F. Amplifier	H	6·3	0·15	250	10·5	−8·5	—	—	2200	17	7700 Ohms.
		Class "C" Power Amplifier, Oscillator				300	25·0	−27	—	—	—	—	—
6C5 6C5G 6C5GT 6C5GT/G	**DETECTOR TRIODE**	A.F. Amplifier	H	6·3	0·3	250	8·0	−8	—	—	2000	20	0·01
6C6	**SHARP CUT-OFF PENTODE**	Biased Detector and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
6C8G	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250	3·2	−4·5	—	—	1600	36	0·0225
6C9	**TWIN V.H.F. TETRODE**	Class "A" Amplifier (each section)	H	6·3	0·4	125	10·0	−1·0	80	1·5	8000	—	0·1
6CA4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	1·0	R.M.S. 2×450 (max.) 2×350 2×250	Full-load D.C. Output 100 150 160	—	—	—	—	—	—
6CA5	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·2	110	Zero Signal 32·0 Max. Signal 31·0	−4·0	110	Zero Signal 3·5 Max. Signal 7·5	8100	—	0·016
						125	Zero Signal 37·0 Max. Signal 36·0	−4·5	125	Zero Signal 4·0 Max. Signal 11·0	9200	—	0·015

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	Unit 1 1·15 (shield.)	Cathode Resistor 100 Ω. Mutual Conductance = 50 µmhos at −13 volts grid bias. Intended for use in V.H.F. Cascode Amplifier Service.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**6BZ8**
— — —	— — 5·5	1·6	As Class "C" Power Amplifier and Oscillator D.C. Grid Current 7·0 mA. Driving Power 0·35 watt. Approx. 2·5 W. can be obtained when used at 150 Mc/s. as an oscillator with 1000 Ω grid resistor and maximum rated input.	21	A	IC	H	H	A	G	K	—	—	—	—	**6C4**
—	—	2·0 2·2 2·2 2·2	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·25 meg. Cathode Resistor = 14,000 Ω. Gain = 14.	30	S	H	A	—	G_1	—	H	K	—	—	—	**6C5** **6C5G** **6C5GT** **6C5GT/G**
—	—	0·007	★ *For data and notes refer type* 6J7G. *For replacement consider also type* 6SJ7GT.	17	H	A	G_2	G_3	K IS	H	—	—	—	G_1	—	**6C6**
—	—	2·6 1·8	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·5 meg. Cathode Resistor = 11,500 Ω. Gain = 27.	30	NC	H	A''	K''	G_1'	A'	H	K'	—	G_1''	—	**6C8G**
—	—	0·055	Plate Current = 20 µA. at −6 volts grid bias.	67	G_1''	G_2''	A''	H	H	K'	G_1'	G_2'	A'	Pin 10 K'' IS	—	**6C9**
—	—	—	Capacitor Input to Filter 50 µF. (max.). Full-load D.C. Output Voltage at Input to Filter 497, 352, 245 respectively. Total Effective Plate Supply Impedance per Plate 310, 230, 150 ohms respectively.	32	A_1	IC	K	H	H	IC	A_2	IC	IC	—	—	**6CA4**
3500 4500	1·1 1·5	0·5	Total Harmonic Distortion 5%, 6% respectively.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**6CA5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	 Voltage Volts	 Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6CA7	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·5	250 See Note	100	−13·5	265	14·9	11,000	—	0·015
		Class "AB" Power Amplifier (two Valves)				Supply 375	Zero Signal 2 x 75 Max. Signal 2 x 95	See Note	See Note	Zero Signal 2 x 11·5 Max. Signal 2 x 22·5	—	—	—
		Class "B" Power Amplifier (two Valves)				775 See Note	Zero Signal 2 x 25 Max. Signal 2 x 91	−39	See Note	Zero Signal 2 x 3 Max. Signal 2 x 19	—	—	—
		Class "A" Power Amplifier (Triode Connected)				See Note	70	See Note	—	—	—	—	—
		Class "AB" Power Amplifier (two Valves Triode Connected)				See Note	Zero Signal 2 x 65 Max. Signal 2 x 71	See Note	—	—	—	—	—
6CB5–A	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	2·5	175	90·0	−30	175	6·0	8800	—	5000 ohms
		Horizontal Deflection Amplifier				D.C. Plate Voltage .. .. .. 800 max. Peak Positive—Pulse Plate Voltage .. 6800 absolute max. Peak Negative—Pulse Plate Voltage .. 1500 max. D.C. Screen Voltage .. .. .. 200 max. D.C. Grid Voltage .. .. .. −50 max.							
6CB6 6CB6A	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	200	9·5	See Note	150	2·8	6200	—	0·6
						125	13	See Note	125	3·7	8000	—	0·28
6CD6-G	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	2·5	175	75	−30	175	5·5	7700	—	7200 ohms
		Horizontal Deflection Amplifier				D.C. Plate Voltage .. .. .. 700 max. Peak Positive Pulse Plate Voltage .. 6600 absolute max. Peak Negative Pulse Plate Voltage .. 1500 max. D.C. Screen Grid Voltage .. .. 175 max. Peak Negative Pulse Grid (G_1) Voltage 200 max.							

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu$F	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
2000	11·0		Plate supply voltage = 265 V. Total Harmonic Distortion 10%.													
Plate to Plate 3400	35·0		Total Harmonic Distortion 5%. Cathode Bias Resistor 130 Ω. Common Series Screen Resistor 470 Ω (375 V. supply).													
Plate to Plate 11,000	100·0	1·0	Plate supply voltage = 800 V. Common Series Screen Resistor 750 Ω (400 V. supply). R.M.S. Grid to Grid volts = 46·8. Total Harmonic Distortion 5%.	30	G_3	H	A	G_2	G_1	NC	H	K	—	—	—	**6CA7**
3000	6·0		Screen tied to plate (375 V. supply). Cathode Bias Resistor 370 Ω. Total Harmonic Distortion 8%.													
Plate to Plate 5000	16·5		Screen tied to plate (400 V. supply). Cathode Bias Resistor 220 Ω. R.M.S. Grid to Grid volts = 44. Total Harmonic Distortion 3%.													
—	—	0·4	Plate Current = 1 mA. at −60 volts grid bias.	30	G_2	H	K G_2	G_1	G_1	K G_3	H	G_2	—	A	—	**6CB5-A**
			Peak Negative-Pulse Grid Voltage .. 200 max. Plate Dissipation .. .. .. 23 watts max. Cathode Current Peak .. .. 770 mA. max. Average .. .. 220 mA. max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)													
—	—	0·025	Cathode Resistor 180 Ω. Plate Current = 10 μA. at −8 volts grid bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6CB6**
—	—		Cathode Resistor 56 Ω. Plate Current = 20 μA. at −6·5 volts grid bias. Type 6CB6A has Controlled Heater warm-up time = 11 secs.													**6CB6A**
—	—	1·0	Plate Current = 1 mA. at −55 volts grid (G_1) bias.	30	NC	H	K G_3	—	G_1	—	H	G_2	—	A	—	**6CD6-G**
			Plate Dissipation .. .. .. 15 watts max. Screen Dissipation .. .. .. 3 watts max. Cathode Current Peak .. .. 700 max. Average .. .. 200 max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts).													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6CD6-GA	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	2·5	175	75·0	−30	175	5·5	7700	—	7200 ohms
		Horizontal Deflection Amplifier				D.C. Plate Voltage .. .. .. 700 max. Peak Positive—Pulse Plate Voltage .. 7000 absolute max. Peak Negative—Pulse Plate Voltage .. 1500 max. D.C. Screen Grid Voltage .. .. 175 max. Peak Negative Pulse Grid Voltage .. 200 max. D.C. Grid (G_1) Voltage .. .. .. −50 max.							
6CE5	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	125	11·0	−1·0	125	2·3	7600	—	0·3
6CF6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	200	9·5	See Note	150	2·8	6200	—	0·6
6CG7	**MEDIUM µ TWIN TRIODE**	Class "A" Amplifier	H	6·3	0·6	250	9·0	−8	—	—	2600	20	7700 ohms
		Vertical Deflection Amplifier				D.C. Plate Voltage .. .. 300 max. Peak Negative-pulse Grid Voltage .. .. 400 max. Cathode Current Peak .. .. 70 mA. max. Average .. .. .. 20 mA. max.							
6CG8 **6CG8A**	**MEDIUM µ TRIODE** **SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	250	7·7	See Note	150	1·6	4600	—	0·75
		Triode Class "A" Amplifier				100	8·5	See Note	—	—	5800	40	6900 ohms
		Converter Pentode Mixer				150	6·2	−3·5	150	1·8	Conv. 2100	—	—
		Triode Oscillator at 250 Mc.				150	13	—	—	—	—	—	—
6CH6	**BEAM POWER PENTODE**	Class "A" Amplifier	H	6·3	0·75	250	40	−4·5	250	6·0	11000	—	0·05
		Class "A" Push-Pull Amplifier				250	80	See Note	250	12	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·1	Plate Current = 1 mA. at −55 volts grid bias.	30	NC	H	K G_3	NC	G_1	NC	H	G_2	—	A	—	**6CD6–GA**
Cathode Current Peak .. .. 700 max. Average .. .. 200 max. Plate Dissipation .. .. .. 20 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)																
—	—	0·003	Plate Current = 35 μA. at −5·0 volts grid bias.	21	G_1	K G_3	H	H	A	G_2	K G_3	—	—	—	—	**6CE5**
—	—	0·02	Cathode Resistor 180 Ω. Plate Current = 35 μA. at −6·5 volts grid voltages.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6CF6**
—	—	4·0	Plate Current = 10 μA. at −18 volts grid bias. Controlled Heater warm-up time = 11 secs.	32	A''	G_1''	K''	H	H	A	G_1'	K'	IS	—	—	**6CG7**
Plate Dissipation either plate .. 3·5 watts max. both plates .. 5 watts max. Peak Heater Cathode Voltage .. 200 (D.C. component must not exceed 100 volts.)																
—	—	0·03	Cathode Resistor 200 Ω. Plate Current = 10 μA. at −10 volts grid bias.	32	$G_1{}^t$	A^t	G_3 K	H	H	A^p	G_2	G_3 K	$G_1{}^p$	—	—	**6CG8** **6CG8A**
—	—	1·5	Cathode Resistor 100 Ω. Plate Current = 10 μA. at −10 volts grid bias.													
— —	— 0·5	—	Oscillator Voltage at mixer grid ($G_1{}^p$) = 2·6 R.M.S. Mixer Grid ($G_1{}^p$) Resistor 0·12 MΩ. Oscillator grid ($G_1{}^t$) Resistor 2700 Ω. Grid ($G_1{}^t$) current 3·6 mA. Type 6CG8A has Controlled Heater warm-up time = 11 secs.													
6000	3·0	0·25	Cathode Resistor 100 Ω. Total Harmonic Distortion 8·5%	32	IC	G_1	IC	H	H	IC	A	G_2	G_3	—	—	**6CH6**
plate / plate 9000	8·0		Cathode Resistor 50 Ω. Total Harmonic Distortion 7·5% For use also as video amplifier.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance µmhos	Amplification factor	Plate resistance Meg-ohms
6CH8	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	200	9·5	See Note	150	2·8	6200	—	0·3
		Triode Class "A" Amplifier				200	13·0	−6·0	—	—	3300	19	5750 ohms
6CJ5	**REMOTE CUT-OFF R.F. AMPLIFIER**	R.F. Amplifier	H	6·3	0·2	250	6·0	−2·5	See Note	1·7	2200	—	1·1
6CJ6	**POWER PENTODE**	Class "A" Amplifier	H	6·3	1·05	250	32	−38·5	250	2·4	4600	—	0·015
		Horizontal Deflection Amplifier				D.C. Plate, Screen Grid Voltage (without current) 550 max. (with current) 300 max. Peak Positive Pulse Plate Voltage .. .. 7000 max. Peak Negative Pulse Plate Voltage .. .. 7000 max. Plate Dissipation .. .. 8 watts max.							
6CK4	**POWER TRIODE**	Class "A" Amplifier	H	6·3	1·25	250	40·0	−28	—	—	5500	6·6	1200 ohms
		Vertical Deflection Amplifier				Plate Voltage .. .. 550 Design max. Peak Positive-pulse Plate Voltage .. 2000 Absolute max. Peak Negative-pulse Grid Voltage .. 250 Design max.							
6CK5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·71	250	36·0	See Note	250	5·2	10000	—	0·04
		Class "AB" Power Amplifier				250	Zero Signal 2×36·0 Max. Signal 2×39·5	See Note	250	Zero Signal 2×5·2 Max. Signal 2×8·0	—	—	—
6CK6	**VIDEO OUTPUT PENTODE**	Video Amplifier	H	6·3	0·71	250	36	−5·5	250	5·0	10,000	—	0·13
6CL6	**POWER PENTODE**	Class "A" Power Amplifier	H	6·3	0·65	250	Zero Signal 30·0 Max. Signal 31·0	−3·0	150	Zero Signal 7·0 Max. Signal 7·2	11000	—	0·15

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·025	Cathode Resistor 180 Ω. Plate Current = 10 µA. at −8 volts grid bias.	32	K^t	A^p	G_2	H	H G_3 IS	K^p	$G_1{}^p$	$G_1{}^t$	A^t	—	—	**6CH8**
—	—	1·6	Plate Current = 10 µA. at −19 volts grid bias. Pin No. 5 must be connected to ground.													
—	—	0·002	Series Screen Resistor 90000 Ω (250 volts supply). Mutual Conductance = 22 µmhos at −39 volts grid bias. Cathode Resistor 325 Ω.	28	H	A	IC	IC	G_2	G_1	K G_3 IS	H	—	—	—	**6CJ5**
—	—	0·8	Peak Heater Cathode Voltage .. 100 max. Screen Grid Dissipation .. .. 4·5 watts max. Plate and Screen Dissipation .. 10 watts	32	K	G_1	K	H	H	IC	IC	G_2	G_3	A	—	**6CJ6**
—	—	6·5	Plate Current = 0·5 mA. at −50 volts grid bias. Plate Dissipation .. .. 12·0 watts Design max. Cathode Current Peak .. 350 mA. Design max. Average .. 100 mA. Design max.	30	G	H	G	—	A	—	H	K	—	—	—	**6CK4**
7000	3·9	1·0	Cathode Resistor 170 Ω. Total Harmonic Distortion 10%.	28	H	A	IC	—	G_2	G_1	K G_3	H	—	—	—	**6CK5**
7000 Plate to Plate	9·4	—	Cathode Resistor 85 Ω. R.M.S. grid to grid input voltage = 11·2. Total Harmonic Distortion 4·6%.													
—	—	0·1		32	G_2	G_1	K	H	H	G_3	A	IS	NC	—	—	**6CK6**
7500	2·8	0·12	Peak A.F. Input = 3 V. Total Harmonic Distortion 8%. Plate Current = 10 µA. at −14 volts grid bias. For use also as TV video power amplifier.	32	K	G_1	G_2	H	H	A	G_3 IS	G_2	G_1	—	—	**6CL6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6CL8 6CL8A	MEDIUM µ TRIODE SHARP CUT-OFF TETRODE	Triode Class "A" Amplifier	H	6·3	0·45	125	15	See Note	—	—	8000	40	5000 ohms
		Tetrode Class "A" Amplifier				125	12	−1·0	125	4	6CL8 5800 6CL8A 6400	—	0·1
6CM4	U.H.F. TRIODE	U.H.F. Amplifier	H	6·3	0·2	175	12	See Note	—	—	14,000	68	—
		U.H.F. Self-Oscillating Mixer				Supply 220	12	—	—	—	—	—	—
6CM5	POWER PENTODE	Class "A" Amplifier	H	6·3	1·25	100	100·0	−7·7	100	7·0	14000	—	5300 ohms
		Class "B" Amplifier				300	Zero Signal 2×18·0 Max. Signal 2×100·0	—29·0	150	Zero Signal 2×0·5 Max. Signal 2×19·0	—	—	—
		Horizontal Deflection Power Amplifier				D.C. Plate Voltage (No Current) .. .. 550 max. Peak Positive-pulse Plate Voltage .. .. 7000 max. Peak Negative-pulse Plate Voltage .. .. 1500 max. D.C. Screen Voltage (No Current) .. .. 550 max. Peak Negative Grid Voltage .. .. .. 1000 max.							
6CM6	BEAM POWER TETRODE	Class "A" Amplifier	H	6·3	0·45	250	45·0	−12·5	250	4·5	4100	—	0·05
		Class "A" Push-pull Amplifier				285	Zero Signal 70·0 Max. Signal 92·0	−19·0	285	Zero Signal 4·0 Max. Signal 13·5	—	—	—
		Vertical Deflection Amplifier				Plate Voltage .. .. 315 max. Peak Positive Plate Voltage .. .. 2000 absolute max. Plate Dissipation .. .. 8 watts max. Screen Voltage .. .. 285 max.							
6CM7	MEDIUM µ TRIODE WITH DISSIMILAR UNITS	Class "A" Amplifier Unit 1	H	6·3	0·6	200	5·0	−7·0	—	—	2000	20	11000 ohms
		Unit 2				250	20·0	−8·0	—	—	4400	18	4100 ohms
		Vertical Deflection Oscillator Unit 1				D.C. Plate Voltage .. .. 500 max. Peak Negative-pulse Grid Voltage .. .. 200 max. Cathode Current Peak .. .. 70 mA. max. Average .. .. .. 15 mA. max.							
		Vertical Deflection Power Amplifier Unit 2				D.C. Plate Voltage .. .. .. 500 max. Peak Positive-pulse Plate Voltage .. 2200 absolute max. Peak Negative-pulse Grid Voltage .. 200 max.							

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·8	Cathode Resistor 56 ohms. Plate Current = 10 μA. at −9·0 volts grid bias.	32	G^t	A^t	K^t	H	H	A tet	G_2 tet	K tet	G_1 tet	—	—	**6CL8** **6CL8A**
—	—	6CL8 0·028 6CL8A 0·02	Controlled Heater warm-up time = 11 secs. Intended for use as V.H.F. Converter in TV Receivers.													
—	—	2·0	Cathode Resistor 125 Ω. Equivalent Noise Resistance 230 Ω.	32	A	G	K	H	H	G	K	G	A	—	—	**6CM4**
5600	—		Grid Resistor 47000 Ω. Grid Current 50 μA.													
—	—	1·1		30	IC	H	IC	G_2	G_1	—	H	K G_3	—	A	—	**6CM5**
3500 Plate to Plate	44·5	—	Max. Signal Input 20 V. R.M.S. per tube. Total Harmonic Distortion 7·2%.													
			Plate Dissipation .. .. .. 10 watts max. Screen Dissipation .. .. .. 5 watts max. Plate and Screen Dissipation .. 13 watts max. Cathode Current .. .. .. 200 mA. max. Peak Heater Cathode Voltage .. 100 max.													
5000	4·5	0·7	Total Harmonic Distortion 8%.	32	G_2	NC	G_1	H	H	G_1	K G_3 IS	NC	A	—	—	**6CM6**
8000 Plate to Plate	14	—	Total Harmonic Distortion 3·5%. Peak grid to grid input voltage = 38.													
			Screen Dissipation .. .. .. 1·75 watts max. Peak Negative Screen Voltage .. 250 max. Cathode Current Peak .. .. 120 mA. max. Average .. .. 40 mA. max.													
—	—	3·8	Plate Current = 10 μA. at −14·0 volts grid bias.	32	A''	NC	K'	H	H	A'	G_1'	G_1''	K''	—	—	**6CM7**
—	—	3·0	Controlled Heater warm-up time = 11 secs.													
			Plate Dissipation .. .. .. 1·25 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)													
			Cathode Current Peak .. .. 70 mA. max. Average .. .. 20 mA. max. Plate Dissipation .. .. .. 5·5 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6CM8	**HIGH µ TRIODE SHARP CUT-OFF PENTODE**	Triode Class "A" Amplifier	H	6·3	0·45	Supply 250	1·8	−2	—	—	2000	100	0·05
		Pentode Class "A" Amplifier				Supply 200	9·5	See Note	150	2·8	6200	—	0·6
6CN6	**POWER PENTODE**	Class "A" Amplifier	H	6·3	1·4	250	100·0	−7·0	250	13·0	14300	—	0·02
		Horizontal Deflection Power Amplifier				Plate Voltage .. .. 800 max. Peak Positive-pulse Plate Voltage .. 4000 max. Plate Dissipation .. .. 25 watts max.							
6CN7	**TWIN DIODE HIGH µ A.F. TRIODE**	Class "A" Amplifier	H	6·3	0·3	250	1·0	−3·0	—	—	1200	70	0·058
				3·15	0·6	100	0·8	−1·0	—	—	1300	70	0·054
6CQ6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	8·0	−2·5	200	2·1	2500	—	—
6CQ8	**MEDIUM µ TRIODE SHARP CUTOFF R.F. TETRODE**	Tetrode Class "A" Amplifier	H	6·3	0·45	125	12·0	−1·0	125	4·2	5800	—	0·14
		Triode Class "A" Amplifier				125	15·0	See Note	—	—	8000	40	5000 ohms
6CR6	**DIODE REMOTE CUTOFF PENTODE**	Class "A" Amplifier	H	6·3	0·3	250	9·5	−2·0	100	3·0	1950	—	0·2
6CS6	**PENTAGRID**	Class "A" Amplifier	H	6·3	0·3	100	0·8	(G_1) 0 (G_3) −1·0	(G_{2+4}) 30	(G_{2+4}) 5·5	$(G_3$—A$)$ 1500	—	0·7
		Sync. Separator, Clipper				10	2·0	(G_1) 0 (G_3) 0	(G_{2+4}) 30	(G_{2+4}) 4·5	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·9	Controlled Heater warm-up time = 11 secs.	32	A^t	$G_1{}^p$	K^p IS G_3	H	H	A^p	G_2	K^t	G^t	—	—	**6CM8**
—	—	0·04	Cathode Resistor 180 Ω. Plate Current = 10 μA. at −8·0 volts grid bias.													
—	—	1·2		30	G_3	H	—	G_2	G_1	—	H	K	—	A	—	**6CN6**
Screen Voltage .. .. 400 max. Screen Dissipation .. .. .. 8 watts max. Cathode Current Average .. .. 200 mA. max. Heater Cathode Voltage .. .. 100 max.																
— —	— —	1·8	Controlled Heater warm-up time = 11 secs. R.C. Amplifier (180 V. supply). Plate Resistor 0·47 mΩ. Following Grid Leak 2·2 mΩ. Cathode Resistor 9100 Ω. Gain 47	32	D_2	D_1	K^d IS	H	H	K^t	G_1	A	H_t	—	—	**6CN7**
—	—	0·007	Mutual Conductance = 5 μmhos at − 28 V. grid bias. Frequency limit 160 Mc/s.	21	G_1	K	H	H	A	G_3 IS	G_2	—	—	—	—	**6CQ6**
—	—	0·019	Plate Current = 100 μA. at −7 volts grid (G_1) bias.	32	A^t	G_1	G_2	H	H	A	K IS	K^t	$G_1{}^t$	—	—	**6CQ8**
—	—	1·8	Cathode Resistor 56 Ω. Plate Current = 100 μA. at −7 volts grid (G_1) bias. Controlled Heater warm-up time = 11 secs.													
—	—	—	Mutual Conductance = 10 μmhos at −40 volts grid bias.	21	K	D	H	H	A	G_2	G_1	—	—	—	—	**6CR6**
—	—	(Cag_1) 0·07 (Cag_3) 0·36	Plate current = 50 μA. at −2·2 volts (G_3) bias.	21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**6CS6**
—	—	—														

D

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6CG7	**MEDIUM μ DOUBLE TRIODE WITH DISSIMILAR UNITS**	Class "A" Amplifier Unit 1	H	6·3	0·6	250	10·5	−8·5	—	—	2200	17	7700 ohms
		Unit 2				250	19·0	−10·5	—	—	4500	15·5	3450 ohms
		Vertical Deflection Oscillator Unit 1				D.C. Plate Voltage .. .. 500 max. Peak Negative-pulse Grid Voltage .. 400 max. Plate Dissipation .. .. 1·25 watts max.							
		Vertical Deflection Power Amplifier Unit 2				D.C. Plate Voltage .. .. .. 500 max. Peak Positive-pulse Plate Voltage .. 2200 absolute max. Peak Negative-pulse Grid Voltage .. 250 max.							
6CT7	**DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·2	250	5·0	−2·0	85 See Note	1·5	2000	—	1·4
6CU5	**BEAM POWER PENTODE**	Class "A" Power Amplifier	H	6·3	1·2	120	49·0	−8·0	110	4·0	7500	—	10000 ohms
6CU7	**TRIODE HEXODE**	Triode Class "A" Amplifier	H	6·3	0·23	100	10·0	0	—	—	2800	22	—
		Hexode Frequency Changer				250	3·0	(G_1h) −2·0	(G_{2+4}) 85	3·0	Conv. 750	—	>1·0
		Triode Oscillator				250	4·8	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	2·6	Plate Current = 10 μA. at −24 volts grid bias.													
—	—	2·6	Plate Current = 50 μA. at −22 volts grid bias. Controlled Heater warm-up time = 11 secs.	32	A''	NC	G_1''	H	H	A'	G_1'	K'	K''	—	—	**6CS7**
Cathode Current Peak .. .. 70 mA. max. Average .. .. 20 mA. max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)																
Plate Dissipation .. .. .. 6·5 watts max. Cathode Current Peak .. .. 105 mA. max. Average .. .. 30 mA. max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)																
—	—	0·002	Mutual Conductance = 20 μmhos at −43 V. grid (G_1) bias. Cathode Resistor 310 Ω. Series Screen Resistor 0·11 mΩ. As R.C. Amplifier 250 V. Supply Following grid leak 0·7 mΩ. Plate Resistor 0·22 mΩ. Screen Resistor 0·02 mΩ. Cathode Resistor 1500 Ω. Gain 120.	28	H	A	D	G_3	G_2	G_1	K IS	H	—	—	—	**6CT7**
2500	2·3	0·7	Total Harmonic Distortion 15%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**6CU5**
—	—	1·3														
—	—	0·1	Screen connected to junction of two series resistors each 27000 Ω connected between B+ and ground. Cathode Resistor 180 Ω.	28	H	A^h	A^t	$G_1{}^t$ G_3	G_2 G_4	$G_1{}^h$	K IS	H	—	—	—	**6CU7**
—	—	—	Plate Resistor 33 kΩ. Oscillator Grid Resistor 47 kΩ. Oscillator Grid Current 200 μA. R.M.S. Oscillator Voltage 8·0													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6CU8	**MEDIUM µ TRIODE SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	200	9·5	See Note	150	2·8	6200	—	0·3
6CV7	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·23	250	1·0	−3·0	—	—	1200	70	0·058
6CW4	**HIGH µ R.F. TRIODE NUVISTOR**	Class "A" Amplifier	H	6·3	0·13	Supply 110	7·6	See Note	—	—	9800	62	6300 ohms
6CW5	**POWER PENTODE**	Class "A" Amplifier	H	6·3	0·76	170	70	−12·5	170	3·5	11,000	—	0·026
		Class "A" Audio Amplifier				200	Zero Signal 65 Max. Signal 64	See Note	See Note	Zero Signal 3·2 Max. Signal 11·4	—	—	—
		Class "AB" Audio Amplifier				250	Zero Signal 2 × 50 Max. Signal 2 × 55	See Note	200	Zero Signal 2 × 2 Max. Signal 2 × 13	—	—	—
		Vertical Deflection Amplifier				D.C. Plate Voltage .. .. .. 250 max. Peak Positive Pulse Plate Voltage 2000 max. (Max. pulse duration 4% of a cycle with 0·8 msec. max.) Plate Dissipation .. .. .. 10 watts max. Grid No. 2 Voltage .. .. 250 max.							
6CW7	**R.F. TWIN TRIODE**	Cascode R.F. Amplifier (each Triode)	H	6·3	0·33	90	12·0	−1·5	—	—	6000	24	—
										Input Conductance at 200 mc/s.		Noise figure with 7-8 Mc/s. bandwidth.	
						With separated cathode connections for grounded cathode triode.				250 µmhos		6·5	
						With common cathode connections for grounded cathode triode.				700 µmhos		5·0	

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	Pentode 0·025 Triode 1·6	Cathode Resistor 180 Ω. Plate Current = 10 μA. at −8 volts grid bias. Controlled Heater warm-up time = 11 secs. For use in multi-purpose TV applications.	32	K^t G_3 IS	A^p	G_2	H	H	K^p	$G_1{}^p$	$G_1{}^t$	A^t	—	—	**6CU8**
—	—	1·5	As R.C. Amplifier (250V. Supply) Following Grid Leak 0·68 mΩ. Plate Resistor 0·22 mΩ. Cathode Resistor 1800 Ω. Gain 51	28	H	A	G_1	IS	D''	D'	K	H	—	—	—	**6CV7**
—	—	0·92	Cathode Resistor 130 Ω. Plate Current = 10 μA. for −4 volts grid bias.	68	IC	A	IC	G_1	IC	IC	IC	K	IC	Pin 10 H	Pin 12 H	**6CW4**
—	—	0·6		32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**6CW5**
2500	5·3		Cathode Resistor 215 Ω. Grid No. 2 Resistor 470 Ω. ~ from 200 volt supply. Total Harmonic Distortion 10%.													
5500 Plate to Plate	18·5		Common Cathode Resistor 150 Ω. R.M.S. Signal Voltage 13. Total Harmonic Distortion 4·5%.													
Grid No. 2 Dissipation 1·75 watts max. Cathode Current 100 mA. max. Heater Cathode Voltage 200 max.																
—	—	(G_1'–A') 1·2 (G_1''–A'') 2·3	For use as a TV Cascode R.F. Amplifier up to 220 Mc/s.	32	K''	G_1'' IS	A''	H	H	G_1'	K_i'	K_o'	A'	—	—	**6CW7**

Use pins 6, 7, 8, 9 as the grounded cathode section of the cascode amplifier.

K_i' should be connected to the R.F. input circuit and K_o' to the chassis.

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6CX8	**HIGH µ TRIODE SHARP CUT-OFF PENTODE**	Triode Class "A" Amplifier	H	6·3	0·75	150	9·2	See Note	—	—	4000	40	8700 ohms
		Pentode Video Amplifier				200	24	See Note	125	5·2	10,000	—	0·07
6CY5	**SHARP CUT-OFF V.H.F. TETRODE**	V.H.F. Amplifier	H	6·3	0·2	125	10	−1·0	80	1·5	8000	—	0·1
6CY7	**DOUBLE TRIODE WITH DISSIMILAR UNITS**	Class "A" Amplifier Unit 1	H	6·3	0·75	250	1·2	−3·0	—	—	1300	68	0·052
		Class "A" Amplifier Unit 2				150	30	See Note	—	—	5400	5	920 ohms
		Vertical Deflection Oscillator Unit 1				D.C. Plate Voltage .. .. .. 350 Design Max. Peak Negative-pulse Grid Voltage .. 400 Design Max. Plate Dissipation .. .. 1·0 watt Design max.							
		Vertical Deflection Power Amplifier Unit 2				D.C. Plate Voltage .. .. .. 350 Design max. Peak Positive-pulse Plate Voltage .. 1800 Design max. Peak Negative-pulse Grid Voltage .. 250 Design max.							
6CZ5	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	0·45	250	46·0	−14·0	250	4·6	4800	—	0·073
		Class "AB" Amplifier				350	Zero Signal 46·0 Max. Signal 103	−23·5	280	Zero Signal 3·0 Max. Signal 13·0	—	—	—
		110° Vertical Deflection Amplifier				D.C. Plate Voltage .. .. .. 315 max. Peak Positive—Pulse Plate Voltage .. 2200 absolute max. D.C. Screen (G_2) Grid Voltage .. .. 285 max. Peak Negative—Pulse Grid (G_1) Voltage 250 max.							
6D4	**GAS TRIODE**	Relaxation Oscillator	H	6·3	0·25	125·0	—	−12·0	—	—	—	—	—
						50·0	—	−6·0	—	—	—	—	—
6D6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	4·4	Cathode Resistor 150 Ω. Plate Current = 100 µA. at −5·0 volts grid bias.	32	K^t	G^t	A^t	H	H	K^p IS G_3	$G_1{}^p$	G_2	A^p	—	—	**6CX8**
—	—	0·06	Cathode Resistor = 68 Ω. Plate Current = 100 µA. at −8·5 volts grid bias.													
—	—	0·03	Plate Current = 20 µA. at −6·0 volts grid bias.	21	G_1	K IS	H	H	A	G_2	K IS	—	—	—	—	**6CY5**
—	—	1·8	Plate Current = 10 µA. at −5·5 volts grid bias.	32	A''	NC	G''	H	H	A'	G'	K'	K''	—	—	**6CY7**
—	—	4·4	Cathode Resistor 620 Ω. Plate Current = 200 µA. at −40·0 volts grid bias.													
Peak Heater-Cathode Voltage .. 200 Design max. (D.C. component must not exceed 100 volts.)																
Plate Dissipation .. .. 5·5 watts Design max. Cathode Current Peak .. 120 mA. Design max. Average .. 35 mA. Design max. Peak Heater-Cathode Voltage 200 Design max. (D.C. component must not exceed 100 volts.)																
5000	5·4	0·7	Plate Current = 100 µA. at −35 volts grid bias. Total Harmonic Distortion 10%. * Do not use. Controlled Heater warm-up time = 11 secs.	32	G_2	NC	G_1	H	H	G_1	K G_3	* IC	A	—	—	**6CZ5**
plate / plate 7500	21·5		Total Harmonic Distortion 1%. Peak grid/grid input voltage 47.													
Cathode Current Peak .. .. 140 mA. max. Average .. .. 40 mA. max. Plate Dissipation .. .. .. 10 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts).																
— —	— —	— —	Peak Cathode Current 100 mA. max. Grid voltage given is that required to start conduction.	21	G_1	—	H	H	K	—	A	—	—	—	—	**6D4**
—	—	0·007	★ *For data and notes refer type* 6U7G.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**6D6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6D8G	**PENTAGRID**	Frequency Converter	H	6·3	0·15	250	3·5	(G_4) −3	(G_{3+5}) 100	2·6	Conv. 550	—	0·4
6DA4	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·2	Peak Inverse 4400 (Design max.)	Peak 900 (Design max.) Average 155 (Design max.)	—	—	—	—	—	—
6DA5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 2·0	−1 for shadow angle 65°	—	—	—	—	—
6DA6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	9·0	−1·95	See Note	3·0	3500	—	0·90
6DB5	**BEAM POWER PENTODE**	Class "A" Amplifier	H	6·3	1·2	110 200	49 46	−7·5 See Note	110 125	4·0 2·2	8000 8000	— —	0·013 0·028
		Vertical Deflection Amplifier				Plate Voltage .. .. 300 max. Peak Positive-pulse Plate Voltage .. 2000 absolute max. Plate Dissipation .. .. 10 watts max. Grid No. 2 Voltage .. .. .. 150 max.							
6DC6	**SEMI-REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	200	9·0	See Note	150	3·0	5500	—	0·5
6DC8	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier Detector	H	6·3	0·3	200	11·0	−1·5	100	3·3	4500	—	0·6
6DE4	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·6	Peak Inverse 5000 (Design max.)	Peak 1100 (Design max.) Average 175 (Design max.)	—	—	—	—	—	—
6DE6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	200	9·5	See Note	150	2·8	6200	—	0·6

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·2	Conversion Conductance = 6 μmhos at – 35 volts grid (G_4) bias. Grid No. 2 Current 4·3 mA through 20,000 Ω (250 volts supply). Osc. Grid (G_1) Current 0·4 mA. Osc. Grid Resistor 50,000 Ω.	30	NC	H	A	G_3 G_5	G_1	G_2	H	K	—	G_4	—	**6D8G**
—	—	—	*Do not use as Tie Points. Peak Heater-Cathode Voltage with Heater Negative with respect to Cathode, 4400 volts Design max. Plate Dissipation 5·5 watts Design max.	30	NC *	NC *	K	—	A	—	H	H	—	—	—	**6DA4**
—	—	—	Plate Resistor 0·5 mΩ. Grid (G_1^t) voltage = –10·5 for shadow angle = 5°.	32	G_1^t	K G_1^l	IC	H	H	IC	A^t D	IC	T	—	—	**6DA5**
—	—	< 0·002	Series Screen Resistor 50 kΩ (250 V. Supply). Cathode Resistor 160 Ω.	32	IS	G_1	K	H	H	IS	A	G_2	G_3	—	—	**6DA6**
2000 4000	2·1 3·8	0·2	*Do not use. Cathode Resistor 180 Ω. Total Harmonic Distortion 10%.	32	G_2	K	G_1	H	H	G_1	G_3 K	IC *	A	—	—	**6DB5**
Grid No. 2 Dissipation .. 1·25 watts max. Cathode Current Peak .. 200 mA. max. Average .. 55 mA. max.																
—	—	0·02	Cathode Resistor 180 Ω. Mutual Conductance = 50 μmhos at –12·5 volts grid bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6DC6**
—	—	< ·0025	Series Screen Resistor 30 kΩ. Mutual Conductance = 120 μmhos at –20 volts grid bias.	32	G_2	G_1	K IS	H	H	A	D'	D''	G_3	—	—	**6DC8**
—	—	—	*Do not use. Plate Dissipation = 6·5 watts Design max. Peak Heater-Cathode Voltage with Heater Negative with respect to Cathode = 5000 Design max.	30	—	IC *	K	—	A	—	H	H	—	—	—	**6DE4**
—	—	0·02	Cathode Resistor 180 Ω. Plate Current = 10 μA. at –10 volts grid bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6DE6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6DE7	TWIN TRIODE WITH DISSIMILAR UNITS	Class "A" Amplifier Unit 1	H	6·3	0·9	250	5·5	−11	—	—	2000	17·5	8750 ohms
		Class "A" Amplifier Unit 2				150	35	−17·5	—	—	6500	6·0	925 ohms
		Vertical Deflection Oscillator Unit 1				D.C. Plate Voltage .. .. .. 330 Design max Peak Negative-pulse Grid Voltage .. 400 Design max. Plate Dissipation .. .. 1·5 watts Design max.							
		Vertical Deflection Amplifier Unit 2				D.C. Plate Voltage .. .. .. 275 Design max. Peak Positive-pulse Plate Voltage .. 1500 Absolute max. Peak Negative-pulse Grid Voltage .. 250 Design max.							
6DG6-GT	BEAM POWER TETRODE	Class "A" Power Amplifier	H	6·3	1·2	200	46·0	*0	125	2·2	8000	—	0·028
						110	49·0	−7·5	110	4·0	8000	—	0·013
6DJ8	HIGH-SLOPE TWIN TRIODE	Class "A" Amplifier (Each Unit)	H	6·3	0·365	90	15	−1·3	—	—	12,500	33	—
6DK6	SHARP CUT-OFF R.F. PENTODE	Class "A" Amplifier	H	6·3	0·3	125	12	See Note	125	3·8	9800	—	0·35
6DL5	POWER PENTODE	Class "A" Power Amplifier	H	6·3	0·2	250	24·0	−9·0	250	4·5	5000	—	0·075
6DN6	BEAM POWER PENTODE	Class "A" Amplifier	H	6·3	2·5	125	70·0	−18·0	125	6·3	9000	—	4000 ohms
		Horizontal Deflection Power Amplifier				D.C. Plate Voltage .. .. .. 700 max. Peak Positive-pulse Plate Voltage .. 6600 absolute max. Peak Negative-pulse Plate Voltage .. 1500 max. Plate Dissipation .. .. 15 watts max.							
6DN7	TWIN TRIODE WITH DISSIMILAR UNITS	Class "A" Amplifier Unit 1	H	6·3	0·9	250	8·0	−8·0	—	—	2500	22·5	9000 ohms
		Class "A" Amplifier Unit 2				250	41	−9·5	—	—	7700	15·4	2000 ohms
		Vertical Deflection Oscillator Unit 1				D.C. Plate Voltage .. .. .. 350 Design max. Peak Negative-pulse Grid Voltage .. 400 Design max. Plate Dissipation .. .. 1·0 watt Design max.							
		Vertical Deflection Amplifier Unit 2				D.C. Plate Voltage .. .. .. 550 Design max. Peak Positive-pulse Plate Voltage .. 2500 Design max. Peak Negative-pulse Grid Voltage .. 250 Design max.							

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	4·0	Plate current = 10 μA. at −20 volts grid bias.													
—	—	8·5	Plate current = 50 μA. at −44 volts grid bias.													
Cathode Current Peak .. 77 mA. Design max. Average .. 22 ma. Design max. Peak Heater-Cathode Voltage 200 Design max. (D.C. Component must not exceed 100 volts.)				32	A''	G''	G''	H	H	A'	G'	K'	K''	—	—	**6DE7**
Plate Dissipation .. .. 7·0 watts Design max. Cathode Current Peak .. 175 mA. Design max. Average .. 50 mA. Design max. Peak Heater-Cathode Voltage 200 Design max. (D.C. Component must not exceed 100 volts.)																
4000 2000	3·8 2·1	0·6	*Cathode Resistor 180 Ω. Total Harmonic Distortion 10%. Peak Grid Voltage 8·5 and 7·5, respectively.	30	NC	H	A	G_2	G_1	H	K G_3	—	—	—	—	**6DG6-GT**
—	—	1·4	Equivalent Noise Resistance 300 Ω. Intended for use as Cascode Amplifier in TV tuners.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**6DJ8**
—	—	0·02	Cathode Resistor 56 Ω. Plate Current = 20 μA. at −6·5 volts grid bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6DK6**
10000	3·0	0·4	Total Harmonic Distortion 11%.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**6DL5**
—	—	0·8	Controlled Heater warm-up time = 11 secs.	30	NC	H	K G_3 IS	—	G_1	—	H	G_2	—	A	—	**6DN6**
D.C. Screen Grid Voltage .. .. 175 max. D.C. Screen Grid Dissipation .. 3·0 watts max. Cathode Current Peak .. .. 700 mA. max. Average .. .. 200 mA. max.																
—	—	4·0	Plate current = 10 μA. at −18 volts grid bias.													
—	—	5·5	Plate Current = 50 μA. at −23 volts grid bias.													
—	—	—	Peak Heater-Cathode Voltage = 200 volts Design max.	30	G''	A''	K''	G'	A'	K'	H	H	—	—	—	**6DN7**
Plate Dissipation .. .. 10 watts Design max. Cathode Current Peak .. 150 mA. Design max. Average .. 50 mA. Design max. Peak Heater-Cathode Voltage 200 volts Design max.																

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6DQ5	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	2·5	175	110	−25	125	5	10500	—	5500 ohms
		Horizontal Deflection Amplifier				D.C. Plate Voltage .. .. .. 900 max. Peak Positive Pulse Plate Voltage .. 7000 absolute max. D.C. Screen Voltage .. .. .. 175 max. Peak Negative—Pulse Grid (G_1) Voltage 200 max.							
6DQ6-A	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·2	250	75·0	−22·5	150	2·4	6600	—	0·02
		Horizontal Deflection Power Amplifier				D.C. Plate Voltage .. .. .. 700 max. Peak Positive-pulse Plate Voltage .. 6000 absolute max. Peak Negative-pulse Plate Voltage .. 1375 max. D.C. Screen Grid Voltage .. .. 200 max. D.C. Grid (G_1) Voltage .. .. .. −50 max.							
6DQ6B	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·2	250	75	−22·5	150	2·4	6600	—	0·02
		Horizontal Deflection Amplifier				D.C. Plate Voltage .. .. .. 770 Design max. Peak Positive-pulse Plate Voltage .. 6500 Design max. Peak Negative-pulse Plate Voltage .. 1500 Design max. D.C. Grid No. 2 Voltage .. .. 220 Design max. Peak Negative-pulse Grid Voltage .. 330 Design max.							
6DR7	**TWIN TRIODE WITH DISSIMILAR UNITS**	Class "A" Amplifier Unit 1	H	6·3	0·9	250	1·4	−3	—	—	1600	68	0·04
		Class "A" Amplifier Unit 2				150	35	−17·5	—	—	6500	6·0	925 ohms
		Vertical Deflection Oscillator Unit 1				D.C. Plate Voltage .. .. .. 330 Design max. Peak Negative-pulse Grid Voltage .. 400 Design max. Plate Dissipation .. .. 1·0 watt Design max.							
		Vertical Deflection Amplifier Unit 2				D.C. Plate Voltage .. .. .. 275 Design max. Peak Positive-pulse Plate Voltage .. 1500 Absolute max. Peak Negative-pulse Grid Voltage .. 250 Design max.							
6DR8	**DUO DIODE R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	6·3	0·12	See Note	6·3	0·04	450	—	0·65
						12·6	0·45	See Note	12·6	0·14	1000	—	1·0
6DS5	**BEAM POWER PENTODE**	Class "A" Amplifier	H	6·3	0·8	250	27	See Note	200	3·0	5800	—	0·028

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·5	Plate Current = 1 mA. at −55 volts grid (G_1) bias.	30	G_1	H	K G_3	G_2	G_1	K G_3	H	G_2	—	A	—	**6DQ5**
			Cathode Current Peak .. .. 1000 mA. max. Average .. .. 285 mA. max. Plate Dissipation .. .. .. 24 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts).													
—	—	0·55	Plate current = 1 mA. at −46 volts grid bias.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**6DQ6–A**
			Peak Negative-Pulse Grid (G_1) Voltage 300 max. Cathode Current Peak .. .. 440 max. Average .. .. 140 max. Plate Dissipation .. .. .. 15 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts).													
—	—	0·5	Plate Current = 1 mA. at −46 volts grid bias.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**6DQ6B**
			Cathode Current Peak .. 550 mA. Design max. Average .. 175 mA. Design max. Plate Dissipation .. .. 17·5 watts Design max. Peak Heater-Cathode Voltage 200 Design max. (D.C. component must not exceed 100 volts.) Controlled heater warm-up time = 11 secs.													
—	—	4·5	Plate current = 10 μA. at −5·5 volts grid bias.	32	A''	G''	G''	H	H	A'	G'	K'	K''	—	—	**6DR7**
—	—	8·5	Plate Current = 50 μA. at −44 volts grid bias.													
			Cathode Current Peak .. 70 mA. Design max. Average .. 20 mA. Design max. Peak Heater-Cathode Voltage 200 Design max. (D.C. Component must not exceed 100 volts.)													
			Plate Dissipation .. .. 7·0 watts Design max. Cathode Current Peak .. 175 mA. Design max. Average .. 50 mA. Design max. Peak Heater Cathode Voltage 200 Design max.													
— —	— —	2·5	Grid Resistor 2·2 mΩ.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**6DR8**
8000	3·6	—	Cathode Resistor 270 Ω. Total Harmonic Distortion 10%. Peak grid/grid input voltage 9·2	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**6DS5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6DS8	**TRIODE HEPTODE**	Frequency Converter Heptode	H	6·3	0·3	6·3 12·6	0·05 0·17	See Note See Note	6·3 12·6	0·08 0·3	Conv. 90 Conv. 220	— —	1·3 1·5
		Triode Section				6·3 12·6	0·3 0·75	See Note See Note	— —	— —	800 1400	14·6 18·3	— —
6DT5	**BEAM POWER PENTODE**	Class "A" Amplifier	H	6·3	1·2	250	44	−16·5	250	1·5	6200	—	—
		Vertical Deflection Amplifier				Plate Voltage .. .. 315 Design max. Peak Positive-pulse Plate Voltage .. 2200 Absolute max. Peak Negative-pulse Grid Voltage .. 250 Design max. Grid No. 2 Voltage .. .. .. 285 Design max.							
6DT6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	150	1·1	See Note	100	2·1	(G_1—A) 800 (G_3—A) 515	—	0·15
6DT8	**HIGH μ TWIN TRIODE**	R.F. Amplifier (Each Unit)	H	6·3	0·3	100 250	3·7 10·0	See Note	— —	— —	4000 5500	60 60	0·015 0·019
6DW5	**BEAM POWER TETRODE**	Vertical Deflection Amplifier	H	6·3	1·2	200	55	−22·5	150	2·0	5500	—	0·015
						Plate Voltage .. .. 330 Design max. Peak Positive-pulse Plate Voltage .. 2200 Absolute max. Peak Negative-pulse Grid Voltage .. 250 Design max. Grid No. 2 Voltage .. .. .. 220 Design max.							
6DX8	**HIGH μ TRIODE POWER PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·72	170 200 220	18 18 18	−2·1 −2·9 −3·4	170 200 220	3·0 3·0 3·0	11,000 10,400 10,000	— — —	>0·1 >0·13 >0·15
		Triode Class "A" Amplifier				200	3	−1·7	—	—	4000	65	—
		Pentode Video Amplifier				Supply 200	18	−2·8	200	3·1	10,000	—	—
		Pentode Class "AB" Push-pull Audio Amplifier				Supply 250	Zero Signal 2×16 Max. Signal 2×18	See Note	Supply 250	Zero Signal 2×2·7 Max. Signal 2×4·7	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	6·0	Grid Resistor 1 mΩ. Grid (G_3) Resistor 47 kΩ. R.M.S. Oscillator Voltage 1·1, 1·7 respectively.	32	G_2 G_4	$G_1{}^h$	K IS	H	H	A	G_3	A^t	$G_1{}^t$	—	—	**6DS8**
— —	— —	1·0														
—	—	0·57	Plate Current = 100 µA. at −35 volts grid bias.	32	G_2	NC	G_1	H	H	G_1	K G_3	IC	A	—	—	**6DT5**
Plate Dissipation .. .. 9·0 watts Design max. Cathode Current Peak .. 190 mA. Design max. Average .. 55 mA. Design max. Grid No. 2 Dissipation .. 2·0 watts Design max. Peak Heater Cathode Voltage 200 Design max.																
—	—	0·02	Cathode Resistor 560 Ω. Plate Current = 10 µA. at −4·5 volts grid (G_1) bias. For use as F.M. Detector.	21	G_1	K IS	H	H	A	G_2	G_3	—	—	—	—	**6DT6**
— —	— —	1·6	Cathode Bias Resistor 270, 200 ohms respectively. Plate Current = 10 µA. at −5 volts and −12 volts respectively.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**6DT8**
—	—	0·5	Plate Current = 0·1 mA. at −55 volts grid bias.	32	G_2	NC	G_1	H	H	G_1	G_3 K	NC	A	—	—	**6DW5**
Plate Dissipation .. .. 11 watts Design max. Cathode Current Peak .. 225 mA. Design max. Average .. 65 mA. Design max. Grid No. 2 Dissipation .. 2·5 watts Design max. Peak Heater Cathode Voltage 200 volts Design max.																
— — —	— — —	< 0·1		32	G^t	A^t	K^t	H	H	A^p	K^p G_3 IS	G_1	G_2	—	—	**6DX8**
—	—	2·7														
3000	—	—														
17,500	5·4		Common Cathode Resistor 117 ohms. R.M.S. Signal Input Voltage 3·5. Total Harmonic Distortion 4%.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6DZ7	**TWIN BEAM POWER PENTODE [with common cathode, Grid No. 2, Grid No. 3]**	Class "A" Amplifier (Each Unit)	H	6·3	1·52	250	48	−7·3	250	5·5	11,300	—	0·038
		Class "AB_1" Power Amplifier (Both Units)				300	Zero Signal 66 Max. Signal 88	See Note	250	Zero Signal 7·0 Max. Signal 15	—	—	—
6E5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 2·0	−7·5 For Shadow Angle 0°	—	—	—	—	—
6EA5	**SHARP CUT-OFF R.F. TETRODE**	R.F. Amplifier	H	6·3	0·2	250	10	−1·0	140	0·95	8000	—	0·15
6EA7	**TWIN TRIODE WITH DISSIMILAR SECTIONS**	Class "A" Amplifier (Sect. 1)	H	6·3	1·05	250	1·5	−3·0	—	—	1900	65	0·034
		Class "A" Amplifier (Sect. 2)				175	48·0	−25·0	—	—	6500	5·0	770 ohms
		Vertical Deflection Oscillator (Sect. 1)				D.C. Plate Voltage .. .. .. 350 design max. Peak Negative Pulse Grid Voltage 400 design max. Plate Dissipation .. .. .. 1·0 watt design max.							
		Vertical Deflection Amplifier (Sect. 2)				D.C. Plate Voltage .. .. .. 550 design max. Peak Positive Pulse Plate Voltage 1500 design max. Plate Dissipation .. .. .. 10 watts design max.							
6EA8	**MEDIUM μ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	125	12	−1	125	4	6400	—	0·08
		Triode Class "A" Amplifier				150	18	See Note	—	—	8500	40	5000 ohms
6EB5	**DOUBLE DIODE**	Rectifier (Each Section)	H	6·3	0·3	Peak Inverse 550 (design max.)	Peak 40 (design max.)	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·7 (Unit 1) 0·5 (Unit 2)	Intended for use in stereophonic sound systems.	30	G_1''	H	A''	G_2	G_1'	A'	H	K G_3	—	—	—	**6DZ7**
9000 Plate to Plate	12	—	Cathode Resistor 120 Ω. Total Harmonic Distortion 3·5%. Peak A.F. Grid to Grid Voltage 22 volts.													
—	—	—	Triode Plate Resistor 1·0 meg. Triode Plate Current 0·2 mA.	17	H	A	G_1^t	T	K	H	—	—	—	—	—	**6E5**
—	—	0·06		21	G_1	K IS	H	H	A	G_2	K IS	—	—	—	—	**6EA5**
—	—	4·0	Plate Current = 20 μA. at −5 volts grid bias.	30	G_1'	A'	K'	G_1''	A''	K''	H	H	—	—	—	**6EA7**
—	—	8·0	Plate Current = 200 μA. at −55 volts grid bias.													
Peak Cathode Current Average Cathode Current			77 mA. design max. 22 mA. design max.													
Peak Cathode Current Average Cathode Current			175 mA. design max. 50 mA. design max.													
—	—	0·02 max.	Controlled Heater warm-up time = 11 secs. Plate Current = 10 μA. at −9 volts grid bias.	32	A^t	G_1^p	G_2	H	H	A^p	K^p G_3 IS	K^t	G^t	—	—	**6EA8**
—	—	1·7	Cathode Resistor 56 Ω. Plate Current = 10 μA. at −12 volts grid bias. Type 6EA8 is intended for use as V.H.F. Converter.													
—	—	—		21	K''	A'	H	H	K'	IS	A''	—	—	—	—	**6EB5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6EB8	**HIGH µ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·75	200	25	See Note	125	7	12,500	—	0·075
		Triode Class "A" Amplifier				250	2	−2	—	—	2700	100	0·037
6EH5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·2	110	Zero Signal 42 Max. Signal 42	See Note	115	Zero Signal 11·5 Max. Signal 14·5	14,600	—	11,000 ohms
		Class "AB_1" Power Amplifier				Supply 140	Zero Signal 47 Max. Signal 51	See Note	Supply 120	Zero Signal 11 Max. Signal 17·7	—	—	—
6EH7	**SEMI-REMOTE CUT-OFF R.F. PENTODE**	Class "A" Amplifier	H	6·3	0·3	200	12	−2·0	90	4·5	12,500	—	0·5
		TV I.F. Amplifier				200	—	−2·0	Supply 200 See Note	—	12,500	—	—
6EH8	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	125	12	−1·0	125	4·0	6000	—	0·17
		Triode Class "A" Amplifier				125	13·5	−1·0	—	—	7500	40	—
6EJ7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	170 200 230	10 10 10	−2·0 −2·5 −3·0	170 200 230	4·1 4·1 4·1	15,600 15,000 14,400	— — —	0·33 0·38 0·45
6EM5	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	0·8	250	35	−18	250	3	5100	—	—
		Vertical Deflection Amplifier				Plate Voltage .. .. 315 max. Peak Positive-pulse Plate Voltage .. 2200 absolute max. Plate Dissipation .. .. 10 watts max. Screen Voltage .. .. 285 max.							

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·1 max.	Cathode Resistor 68 Ω. Plate Current = 100 μA. at −9 volts grid bias. Pentode intended for Video Amplifier usage.	32	K^t	G^t	A^t	H	H	K^p G_3 IS	$G_1{}^p$	G_2	A^p	—	—	**6EB8**
—	—	4·4	Plate Current = 20 μA. at −5 volts grid bias. Triode intended for Sync. Separator, Amplifier usage.													
3000	1·4	0·65	Cathode Resistor 62 Ω. Total Harmonic Distortion 7%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**6EH5**
6000 Plate to Plate	3·8		Cathode Resistor 68 Ω. Total Harmonic Distortion 5%.													
—	—	0·005 max.	Input Resistance at 40 Mc/s. 10,000 ohms.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**6EH7**
—	—		Grid No. 2 Resistor 24,000 ohms. Mutual Conductance = 125 μmhos at −19 volts grid bias.													
—	—	0·020 max.	Controlled Heater warm-up time = 11 secs. Plate Current = 20 μA. at −10 volts grid bias.	32	K G_3 IS	G^t	A^t	H	H	K^p G_3 IS	$G_1{}^p$	G_2	A^p	—	—	**6EH8**
—	—	1·8	Plate Current = 20 μA. at −9 volts grid bias.													
— —	— —	0·0055 max.	Input Resistance at 40 Mc/s. 8500, 10,000, 11,500 ohms respectively.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**6EJ7**
—	—	0·7 max.	Plate Current = 0·2 mA. at −37 volts grid bias. *Do not use.	32	G_2	NC	G_1	H	H	G_1	K G_3	IC *	A	—	—	**6EM5**
Screen Dissipation .. .. 1·5 watts max. Peak Negative-pulse Grid Voltage 250 max. Cathode Current Peak .. 210 mA. max. Average .. 60 mA. max. Peak Heater-Cathode Voltage 200 volts max.																

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6EM7	**TWIN TRIODE WITH DISSIMILAR UNITS**	Class "A" Amplifier Unit 1	H	6·3	0·9	250	1·4	−3	—	—	1600	68	0·04
		Class "A" Amplifier Unit 2				150	50	−20	—	—	7200	5·4	750 ohms
		Vertical Deflection Oscillator Unit 1				D.C. Plate Voltage .. .. .. 330 Design max. Peak Negative-pulse Grid Voltage .. 400 Design max. Plate Dissipation .. .. 1·5 Design max.							
		Vertical Deflection Amplifier Unit 2				D.C. Plate Voltage .. .. .. 330 Design max. Peak Positive-pulse Plate Voltage .. 1500 Absolute max. Peak Negative-pulse Grid Voltage .. 250 Design max.							
6EQ7	**DIODE REMOTE CUT-OFF PENTODE**	Class "A" Amplifier	H	6·3	0·3	100	9·0	See Note	100	3·5	3800	—	0·25
6ER5	**SEMI-REMOTE CUT-OFF V.H.F. TRIODE**	Class "A" Amplifier	H	6·3	0·18	200	10	−1·2	—	—	10,500	80	8000 ohms
6ES5	**SEMI-REMOTE CUT-OFF V.H.F. TRIODE**	Class "A" Amplifier	H	6·3	0·2	200	15	−1·0	—	—	9500	70	7400 ohms
6ES6	**R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	6·3	0·8	*−0·85	3·15	0·3	900	—	0·07
						12·6	2·5	*−0·8	6·3	0·9	1800	—	0·1
		Mixer				6·3	0·35	See Note	3·15	0·45	Conv. 250	—	—
						12·6	1·0	See Note	6·3	1·35	500	—	—
6ES8	**SEMI-REMOTE CUT-OFF V.H.F. TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3	0·365	90	15	−1·4	—	—	12,500	—	2500 ohms
6ET6	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	6·3	1·6	−0·85	6·3	0·65	1700	—	0·025
						12·6	1·85	−0·85	6·3	0·55	2000	—	0·2
6ET7	**DOUBLE DIODE SHARP CUT-OFF PENTODE**	Class "A" Amplifier	H	6·3	0·75	200	25	See Note	150	5·5	11,500	—	0·06
6EU7	**HIGH µ TWIN TRIODE (low noise)**	Class "A" Amplifier (Each unit)	H	6·3	0·3	100	0·5	−1	—	—	1250	100	0·08
						250	1·2	−2	—	—	1600	100	0·0625

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	4·5	Plate Current = 10 µA. at −5·5 volts grid bias.	30	G''	A''	K''	G'	A'	K'	H	H	—	—	—	**6EM7**
—	—	10	Plate Current = 100 µA. at −45 volts grid bias.													
Cathode Current Peak .. 77 mA. Design max. Average .. 22 mA. Design max. Peak Heater-Cathode Voltage 200 Design max.																
Plate Dissipation .. .. 10 watts Design max. Cathode Current Peak .. 175 mA. Design max. Average .. 50 mA. Design max. Peak Heater-Cathode Voltage 200 Design max.																
—	—	0·002 max.	Grid No. 1 Resistor (bypassed) = 2·2 mΩ. Mutual Conductance = 40 µmhos at −20 volts grid bias.	32	G_3	G_1	K	H	H	G_2	A	D	IS	—	—	**6EQ7**
—	—	0·38	Mutual Conductance = 100 µmhos at −5·6 volts grid bias.	21	K	G	H	H	A	IS	K	—	—	—	—	**6ER5**
—	—	0·36	Plate Current = 100 µA. at −9 volts grid bias.	21	K	G	H	H	A	IS	K	—	—	—	—	**6ES5**
—	—	0·02	* Grid (G_1) Resistor 10 mΩ.	21	G_1	K	H	H	A	G_2	G_3	—	—	—	—	**6ES6**
—	—															
—	—		Grid (G_3) Resistor 0·1 mΩ. R.M.S. Oscillator Voltage 5, 10 respectively. Grid (G_1) Resistor 10 mΩ.													
—	—															
—	—	1·9	Mutual Conductance = 0·05 of nominal value at −5 volts grid bias. Mutual Conductance = 0·01 of nominal value at −9 volts grid bias.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**6ES8**
—	—	0·02	Grid (G_3) Voltage 3·15, 6·3 respectively.	21	G_1	K	H	H	A	G_2	G_3	—	—	—	—	**6ET6**
—	—															
—	—	0·1 max.	Cathode Resistor 100 Ω. Plate Current = 100 µA. at −10 volts grid bias.	32	K^d S	D_2	D_1	H	H	K^p G_3 IS	G_1	G_2	A^p	—	—	**6ET7**
—	—	1·5		32	H	H	NC	K''	G''	A''	A'	G'	K'	—	—	**6EU7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6EU8	**MEDIUM μ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	125	12	−1·0	125	4·0	6400	—	0·08
		Triode Class "A" Amplifier				150	18	See Note	—	—	8500	40	5000 ohms
6EV5	**R.F. TETRODE**	R.F. Amplifier	H	6·3	0·2	250	11·5	−1	80	0·9	8800	—	0·15
6EV7	**TWIN TRIODE**	Class "A" Amplifier (Each Section)	H	6·3	0·6	250	9·2	−2·0	—	—	5200	60	11,500 ohms
6EW6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·4	125	11	See Note	125	3·2	14,000	—	0·2
6EW7	**TWIN TRIODE WITH DISSIMILAR SECTIONS**	Class "A" Amplifier (Sect. 1)	H	6·3	0·9	250	5·5	−11	—	—	2000	17·5	8750 ohms
		Class "A" Amplifier (Sect. 2)				150	45	−17·5	—	—	7500	6·0	800 ohms
		Vertical Deflection Oscillator (Sect. 1)				D.C. Plate Voltage .. .. .. 330 design max. Peak Negative Pulse Grid Voltage 400 design max. Plate Dissipation .. .. .. 1·5 watts design max.							
		Vertical Deflection Amplifier (Sect. 2)				D.C. Plate Voltage .. .. .. 330 design max. Peak Positive Pulse Plate Voltage 1500 design max. Plate Dissipation .. .. .. 10 watts design max.							
6EX6	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	2·25	175	67	−30	175	3·3	7700	4·2	8500 ohms
		Horizontal Deflection Amplifier				D.C. Plate Supply Voltage .. .. 770 Design max. Peak Positive Plate Voltage .. .. 7000 Absolute max. Peak Negative Plate Voltage .. .. 1500 Absolute max. Grid No. 2 Voltage .. .. .. 195 Design max. Peak Negative Grid No. 1 Voltage .. 220 Design max.							
6EY6	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	0·68	250	44	−17·5	250	3·0	4400	—	0·06
		Vertical Deflection Amplifier				Plate Voltage .. .. 350 Design max. Peak Positive Plate Voltage .. .. 2500 Design max. Plate Dissipation .. .. 11 watts Design max. Grid No. 2 Voltage .. .. .. 300 Design max.							

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·02 max.	Plate Current = 10 μA. at −9 volts grid bias. Controlled Heater warm-up time = 11 secs.	32	A^p	G^t	A^t	H	H	K^t	$G_1{}^p$	K^p G_3 IS	G_2	—	—	**6EU8**
—	—	1·7	Cathode Resistor 56 Ω. Plate Current = 10 μA. at −12 volts grid bias. Type 6EU8 is intended for use as converter in TV receivers.													
—	—	0·035 max.	Grid bias for Mutual Conductance of 100 μmhos = −4·5 volts. For use in TV tuners.	21	G_1	K IS	H	H	A	G_2	K IS	—	—	—	—	**6EV5**
—	—	3·4	Plate Current = 100 μA. at −9 volts grid bias.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	NC	—	—	**6EV7**
—	—	0·04 max.	Cathode Resistor 56 Ω. Plate Current = 20 μA. at −3·5 volts grid bias.	21	G_1	K	H	H	A	G_2	G_3	—	—	—	—	**6EW6**
—	—	4·2	Plate Current = 10 μA. at −20 volts grid bias.	32	A''	G_1''	G_1''	H	H	A'	G'	K'	K''	—	—	**6EW7**
—	—	9·0	Plate Current = 100 μA. at −40 volts grid bias.													
			Cathode Current—Peak 77 mA. design max. Average 22 mA. design max.													
			Cathode Current—Peak 175 mA. design max. Average 50 mA. design max.													
—	—	1·1	Plate current = 1·0 mA. at −50 volts grid bias.	30	NC	H	K G_3	—	G_1	—	H	G_2	—	A	—	**6EX6**
			Plate Dissipation .. .. 22 watts Design max. Grid No. 2 Dissipation .. 3·5 watts Design max. Cathode Current Peak .. 770 mA. Design max. Average .. 220 mA. Design max. Peak Heater-Cathode Voltage 200 Design max.													
—	—	0·7	Plate Current = 100 μA. at −48 volts grid bias.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**6EY6**
			Cathode Current Peak .. 180 mA. Design max. Average .. 60 mA. Design max. Grid No. 2 Dissipation .. 2·75 watts Design max. Peak Heater-Cathode Voltage 200 Design max.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6EZ5	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	0·8	250	43	−20	250	3·5	4100	—	0·05
		Vertical Deflection Amplifier				Plate Voltage .. .. 350 Design max. Peak Pulse Plate Voltage . .. 2500 Design max. Grid No. 2 Voltage .. .. .. 300 Design max. Plate Dissipation .. .. 12 watts Design max.							
6EZ8	**TRIPLE TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3	0·45	125	4·2	−1·0	—	—	4200	57	0·0136
6F5 **6F5GT**	**HIGH μ TRIODE**	A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1500	100	0·066
6F6	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·7	250	Zero Signal 34·0 Max. Signal 36·0	−16·5	250	Zero Signal 6·5 Max. Signal 10·5	2500	—	0·08
6F6G **6F6GT** **6F6GT/G**		Class "AB$_2$" Power Amplifier				375	Zero Signal 54·0 Max. Signal 77·0	Self Bias	250	Zero Signal 8·0 Max. Signal 18·0	—	—	—
6F7	**TRIODE REMOTE CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	★	★
6F8G	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·6	250	9·0	−8	—	—	2600	20	7700 Ohms.
6FA7	**DIODE SHARP CUT-OFF TWIN-PLATE TETRODE**	Class "A" Amplifier (Either) tetrode plate with other earthed)	H	6·3	0·3	100	2·2	See Note	100	3	1900	—	0·13

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·6	Plate Current = 100 μA. at −50 volts grid bias. Cathode Current Peak .. 260 mA. Design max. Average .. 75 mA. Design max. Grid No. 2 Dissipation .. 2·75 watts Design max. Peak Heater-Cathode Voltage 200 Design max.	30	—	H	A	G_2	G_1	—	H	G_3	—	—	—	**6EZ5**
—	—	1·5 (Each Unit)	Plate Current = 20 μA. at −4 volts grid bias.	32	K'''	G'''	A'''	H K'' K'	H	A''	G''	A'	G'	—	—	**6EZ8**
—	—	2·4	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·5 meg. Cathode Resistor = 5400 Ω. Gain = 70.	30	S	H	NC	A	NC	—	H	K	—	G_1	—	**6F5**
		2·8			NC	H	NC	A	NC	—	H	K	—	G_1	—	**6F5GT**
7000	3·2	0·2	Total Harmonic Distortion 8%. For Self-biased Operation the Cathode Bias Resistor should be 410 Ω.	30	S	H	A	G_2	G_1	—	H	K	—	—	—	**6F6**
Plate to Plate 10000	19·0	0·5 0·5 0·5	Cathode Resistor 340 Ω. Peak A.F. Grid to Grid Volts = 94. Values are for two tubes. Total Harmonic Distortion 5%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**6F6G** **6F6GT** **6F6GT/G**
—	—	2·0 0·008	★ *For data and notes refer type* 6P7G.	19	H	A^p	G_2	A^t	$G_1{}^t$	K	H	—	—	$G_1{}^p$	—	**6F7**
—	—	$3{\cdot}8_{t1}$ $3{\cdot}2_{t2}$	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 6950 Ω. Gain = 14.	30	NC	H	A''	K''	$G_1{}'$	A'	H	K'	—	$G_1{}''$	—	**6F8G**
—	—	0·04 (Grid No. 1 to plate A) 0·03 max. (Grid No. 1 to plate B)	Grid No. 1 Resistor (bypassed) = 2·2 MΩ.	32	A_1	NC	D	H	H	K IS	G_1	G_2	A_2	—	—	**6FA7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6FE5	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	1·2	Supply 130	88	See Note	Supply 130	5·0	9500	—	8000 ohms
		Class "A_1" Push-pull Power Amplifier				Supply 130	Zero Signal 150 Max. Signal 154	See Note	Supply 130	Zero Signal 7·2 Max. Signal 17	—	—	—
6FG6	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·21	Target Volts 250	Target Current 1·0	0 for Max. Shadow Length	—	—	—	—	—
6FH5	**V.H.F. TRIODE**	Class "A" Amplifier	H	6·3	0·2	135	11	−1·0	—	—	9000	50	5600 ohms
6FM8	**DOUBLE DIODE HIGH µ TRIODE**	Triode Class "A" Amplifier	H	6·3	0·45	250	1·0	−3	—	—	1200	70	0·058
6FQ5A	**V.H.F. HIGH SLOPE TRIODE**	Class "A" Amplifier	H	6·3	0·18	135	8·9	−1·2	—	—	12,000	74	6300 ohms
6FV6	**V.H.F. TETRODE**	Class "A" Amplifier	H	6·3	0·2	125	10	−1	80	1·5	8000	—	0·1
6FV8	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	125	12	−1·0	125	4·0	6500	—	0·2
		Triode Class "A" Amplifier				125	14	−1·0	—	—	8000	40	5000 ohms
		Triode Unit as Vertical Deflection Oscillator				Plate Voltage .. .. 330 Design max. Peak Negative-pulse Grid Voltage .. 250 Design max. Plate Dissipation .. .. 2·0 watts Design max.							
6FW8	**MEDIUM µ V.H.F. TWIN TRIODE**	Class "A" Amplifier (Each unit)	H	6·3	0·4	100	15	−1·2	—	—	13,000	33	2500 ohms
6G5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	★	★	★	—	—	—	—	—
6G6G	**POWER OUTPUT PENTODE**	Class "A_1" Power Amplifier	H	6·3	0·15	135 180	11·5 15·0	−6 −9	135 180	2·0 2·5	2100 2300	— —	0·17 0·175

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
1000	3·5	0·44	Cathode Resistor 120 Ω. Peak Signal Voltage 11·9. Total Harmonic Distortion 10%.	30	—	H	A	G_2	G_1	—	H	K G_3	—	—	—	**6FE5**
1600 Plate to Plate	7·0		Cathode Resistor 75 Ω. Peak Grid to Grid Signal Input voltage 25·8. Total Harmonic Distortion 6%.													
—	—	—	Triode Plate Resistor 0·47 MΩ. (250 V. supply). Grid Bias −22 volts for Zero Shadow Length.	32	G^t	IC	K G^i	H	H	T	DE	IC	A^t	—	—	**6FG6**
—	—	0·6	Plate Current = 100 μA. at −5·5 volts grid bias.	21	K	G	H	H	A	IS	K	—	—	—	—	**6FH5**
—	—	1·8	D.C. Diode Plate Volts = 5. D.C. Diode Plate Current = 20 mA.	32	$K_{d''}$	D'	$K_{d'}$	H	H	D''	K	G	A	—	—	**6FM8**
—	—	0·52	Plate Current = 100 μA. at −4·5 volts grid bias.	21	K	G_1	H	H	A	IS	K	—	—	—	—	**6FQ5A**
—	—	0·03 max.	Plate Current = 20 μA. at −6 volts grid bias.	21	G_1	IS	H	H	A	G_2	K	—	—	—	—	**6FV6**
—	—	0·02 max.	Plate Current = 20 μA. at −9 volts grid bias. Controlled Heater warm-up time = 11 secs.	32	G^t	A^t	K^t	H	H	A^p	G_2	K G_3 IS	$G_1{}^p$	—	—	**6FV8**
—	—	1·8	Plate Current = 20 μA. at −9 volts grid bias.													
Cathode Current Peak .. 70 mA. Design max. Average .. 20 mA. Design max. Peak Heater-Cathode Voltage 200 Design max.																
—	—	1·9	Mutual Conductance = 70 μmhos at −6 volts grid bias.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**6FW8**
—	—	—	★ *For data and notes refer type* 6U5/6G5.	17	H	A^t	$G_1{}^t$	T	K	H	—	—	—	—	—	**6G5**
12000 10000	0·6 1·1	0·5	Total Distortion 7·5%. Total Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**6G6G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6G8G	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector, R.F. and A.F. Amplifier	H	6·3	0·3	250	9·5	−3	125	2·2	1210	—	0·51
						250	6·5	−3	100	1·5	1100	—	0·85
6GC6	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·2	250	75	−22·5	150	2·4	6600	—	0·02
		Horizontal Deflection Amplifier				Plate Supply Voltage .. .. 770 Design max. Peak Positive Plate Voltage .. .. 6500 Design max. Peak Negative Plate Voltage .. .. 1500 Design max.							
6GH8	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·45	125	12·0	−1	125	4·0	7500	—	0·2
		Triode Class "A" Amplifier				125	13·5	−1	—	—	8500	46	5400 ohms
6GJ8	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE**	Triode Class "A" Amplifier	H	6·3	0·6	125	13·5	−1·0	—	—	8500	40	5000 ohms
		Pentode Class "A" Amplifier				125	12·0	−1·0	125	4·5	7500	—	0·15
6GK5	**V.H.F. HIGH SLOPE TRIODE**	Class "A" Amplifier	H	6·3	0·18	135	11·5	−1·0	—	—	15,000	78	5400 ohms
6GK6	**POWER PENTODE**	Class "A" Power Amplifier	H	6·3	0·76	250	48	See Note	250	5·5	11,300	19	0·038
		Class "AB" Push-pull Amplifier				250	Zero Signal 62 Max. Signal 75	See Note	250	Zero Signal 7 Max. Signal 15	—	—	—
						300	Zero Signal 72 Max. Signal 92	—	300	Zero Signal 8 Max. Signal 22	—	—	—
6GM6	**SEMI REMOTE CUT-OFF R.F. PENTODE**	Class "A" Amplifier	H	6·3	0·4	Supply 125	14	See Note	Supply 125	3·4	13,000	—	0·2

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·007	Mutual Conductance = 10 μmhos at − 43 volts (125 volts Screen) and − 35 volts (100 volts Screen) Grid Bias. As R.C. Amplifier. Plate and Screen Supply 250 V. Plate Load Resistor 0·25 meg. Following Grid Leak 1·0 meg. Cathode Resistor 2000 Ω. Screen Voltage from a voltage divider of 1·0 meg. to B + and 0·25 meg. to B −. Gain = 93.	30	NC	H	A	D_2	D_1	G_2	H	G_3 K IS	—	G_1	—	**6G8G**
—	—	0·55	Plate Current = 1 mA. at −46 volts grid bias.	30	—	H	K G_3	G_2	G_1	—	H	G_2	—	A	—	**6GC6**
Plate Dissipation .. .. 17·5 watts Design max. Cathode Current Peak .. 550 mA. Design max. Average .. 175 mA. Design max. Peak Heater-Cathode Voltage 200 volts Design max.																
—	—	0·02 max.	Plate Current = 10 μA. at −8 volts grid bias for both triode and pentode. Controlled Heater warm-up time = 11 secs.	32	A^t	$G_1{}^p$	$G_2{}^p$	H	H	A^p	K^p $G_3{}^p$ IS	K^t	G^t	—	—	**6GH8**
—	—	1·6														
—	—	2·6	Plate Current = 20 μA. at −9 volts grid bias.	32	A^t	$G_1{}^p$	G_2	H	H	A^p	K G_3	K^t	$G_1{}^t$	—	—	**6GJ8**
—	—	0·036	Plate Current = 20 μA. at −6·5 volts grid bias.													
—	—	0·52	Mutual Conductance = 150 μmhos at −4·2 volts grid bias.	21	K	G	H	H	A	IS	K	—	—	—	—	**6GK5**
5200	5·7	0·14	Cathode Resistor 135 Ω. R.M.S. Signal Input Voltage 4·3. Total Harmonic Distortion 10%.	32	K	G_1	G_3 IS	H	H	NC	A	G_2	G_3 IS	—	—	**6GK6**
8000 plate to plate	11	—	Cathode Resistor 130 Ω in each case. R.M.S. Signal Input Voltage Grid to Grid 8, 10 volts respectively. Total Harmonic Distortion 3%, 4% respectively.													
8000 Plate to Plate	17															
—	—	0·036 max.	Cathode Resistor 56 ohms. Mutual Conductance 60 μmhos at −15 volts grid bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**6GM6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6GN8	**HIGH μ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·75	200	25	See Note	150	5·5	11,500	—	0·06
		Triode Class "A" Amplifier				250	2	−2	—	—	2700	100	0·037
6GS8	**SHARP CUT-OFF TWIN PENTODE** [Common Cathode Grid No. 1 Grid No. 2]	Class "A" Amplifier Each unit with both units operating	H	6·3	0·3	100	—	See Note G_3 −10	67·5	6·0	—	—	—
						100	2·0	See Note G_3 0	67·5	3·6	—	—	—
		Each unit operating separately with plate and Grid No. 3 of opposite section earthed.				100	—	0 Grid No. 3 0	67·5	—	(A-G_1) 1200	—	—
						100	2·0	* Grid No. 3 0	67·5	—	(A-G_3) 270	—	—
6GV8	**HIGH μ TRIODE POWER PENTODE**	Triode Class "A" Amplifier	H	6·3	0·9	100	10	0	—	—	5500	50	9000 ohms
		Pentode Vertical Deflection Amplifier				Plate Voltage .. .. 250 max. Peak Positive-pulse Plate Voltage .. 2000 max. (Max. pulse duration 5% of a cycle with max. of 1 m.sec.) Plate Dissipation .. .. 7 watts max. Grid No. 2 Voltage .. .. .. 250 max. Grid No. 2 Dissipation .. .. .. 1·5 watts max. Cathode Current .. .. 75 mA. max.							
6GW8	**HIGH μ TRIODE POWER PENTODE**	Triode Class "A" Amplifier	H	6·3	0·7	250	1·2	−1·9	—	—	1600	100	—
		Pentode Class "A" Power Amplifier				250	36	See Note	250	6	10,000	—	0·048
		Pentode Class "AB" Push-pull Amplifier				250	Zero Signal 2×35 Max. Signal 2×37·3	See Note	250	Zero Signal 2×5·6 Max. Signal 2×9	—	—	—
						300	Zero Signal 2×31 Max. Signal 2×37	See Note	300	Zero Signal. 2×5 Max. Signal 2×10·6	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·1 max.	Cathode Resistor 100 Ω. Plate Current = 100 μA. at −10 volts grid bias.	32	K^t	G^t	A^t	H	H	K G_3 IS	$G_1{}^p$	G_2	A	—	—	**6GN8**
—	—	4·4	Plate Current = 20 μA. at −5 volts grid bias.													
—	—	Grid No. 3 to Plate (Each Unit) 2·0 Grid No. 1 to all 6·0	Grid No. 1 Current adjusted for 100 μA. D.C.	32	K IS	G_2	A''	H	H	$G_3{}''$	G_1	A'	$G_3{}'$	—	—	**6GS8**
—	—		Type 6GS8 is intended for use in TV receivers as combined Sync. Separator-clipper and AGC valve.													
—	—		*Grid No. 1 Current adjusted for 100 μA. D.C. Plate Current = 100 μA. when V_{g1} = −2 volts.													
—	—		Plate Current = 100 μA. when V_{g3} = −3·7 volts.													
—	—	—		32	A^t	G^t	K^t	H	H	A^p	G_2	K^p G_3 IS	$G_1{}^p$	—	—	**6GV8**
End of Scan Plate Voltage .. 50 65 Grid No. 2 Voltage .. 170 210 Grid No. 1 Voltage .. −1·0 −1·0 Peak Anode Current .. .. 200 285 mA. Peak Grid No. 2 Current .. 35 45 mA.																
—	—	1·4	R.C. Coupled Amplifier (250 volt supply). Plate Resistor .. 0·22 MΩ. Grid No. 1 Resistor 10 MΩ. Following Grid No. 1 Resistor 0·68 MΩ. Voltage Gain .. 70.	32	$G_1{}^t$	K^t	G_2	H	H	A^p	K^p IS G_3	$G_1{}^p$	A^t	—	—	**6GW8**
7000	4·0	0·4 max,	Cathode Resistor.. 170 ohms. R.M.S. Signal Input Voltage 3·2. Total Harmonic Distortion 10%.													
8200 Plate to Plate	10·0		Cathode Resistor 90 ohms, 145 ohms respectively. R.M.S. Signal Input Voltage 5·1, 8·7 volts respectively. Total Harmonic Distortion 4·5, 5% respectively.													
9100 Plate to Plate	14·3															

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6H6 **6H6G** **6H6GT** **6H6GT/G**	**TWIN DIODE**	Detector Full-wave Rectifier	H	6·3	0·3	Max. R.M.S. 2 x 117	D.C. Output per Plate 4·0	—	—	—	—	—	—
6H6GA	**TWIN DIODE**	Detector Rectifier	H	6·3	0·2	★	★	—	—	—	—	—	—
6HC8	**HIGH μ TRIODE POWER PENTODE**	Triode Class "A" Amplifier	H	6·3	1·2	250	1·4	−3	—	—	2000	68	0·034
		Pentode Class "A" Amplifier				250	38	−18	250	3	5100	—	0·055
		Triode Vertical Deflection Oscillator				D.C. Plate Voltage .. .. .. 330 design max. Peak Negative Pulse Grid Voltage 400 design max. Plate Dissipation .. .. .. 1·0 watt design max.							
		Pentode Vertical Deflection Amplifier				D.C. Plate Voltage .. .. .. 350 design max. Grid No. 2 Voltage .. .. 315 design max. Peak Positive Pulse Plate Voltage 2200 design max.							
6HG8	**MEDIUM μ TRIODE HIGH SLOPE PENTODE**	Pentode Class "A" Amplifier	H	6·3	0·38	170	10·0	−1·2	150	3·3	12,000	—	0·35 min.
		Triode Class "A" Amplifier				100	14·0	−3·0	—	—	5500	17	—
		Frequency Converter Pentode Mixer				190	8·5	See Note	See Note	2·7	Conv. 4500	—	—
		Triode Oscillator				Supply 190	12	See Note	—	—	3500	—	—
6J4	**U.H.F. TRIODE**	Grounded Grid Amplifier	H	6·3	0·4	100 150	10·0 15·0	See Note	— —	— —	11000 12000	55 55	5000 Ohms. 4500
6J5 **6J5G** **6J5GT** **6J5GT/G**	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	H	6·3	0·3	250	9·0	−8	—	—	2600	20	7700 Ohms.
6J6	**TWIN TRIODE**	R.F. Amplifier	H	6·3	0·45	100	8·5	See Note	—	—	5300	38	7100 Ohms.

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 15 Ω per plate. Greater Supply Impedances required for larger input capacities.	30	S	H	D_2	K''	D_1	—	H	K'	—	—	—	**6H6**
					IS	H	D_2	K''	D_1	—	H	K'	—	—	—	**6H6G** **6H6GT** **6H6GT/G**
—	—	—	★ *For data and notes refer type* EB34.	30	S M	H	D_1	K'	D_2	—	H	K''	—	—	—	**6H6GA**
—	—	4·4	Plate Current = 20 μA. at −5 volts grid bias.	32	$G_1{}^t$	K^p IS G_3	$G_1{}^p$	H	H	A^p	$G_2{}^p$	K^t	A^t	—	—	**6HC8**
—	—	0·2	Plate Current = 100 μA. at −39 volts grid bias.													
Cathode Current—Peak Average			70 ma. design max. 20 mA. design max.													
Plate Dissipation Cathode Current—Peak Average			11 watts design max. 230 mA. design max. 65 mA. design max.													
—	—	0·012		32	K^p G_3 K^t IS	$G_1{}^p$	K^p G_3 K^t IS	H	H	$G_1{}^t$	A^t	A^p	$G_2{}^p$	—	—	**6HG8**
—	—	2·0														
—	—		Grid No. 1 Resistor 0·1 MΩ. Grid No. 2 Resistor 18,000 Ω from 190 volt supply.													
—	—		Plate Resistor 8200 Ω. Grid No. 1 Resistor 10,000 Ω.													
— —	— —	4·0	Cathode Resistor 100 Ω.	21	G_1	K	H	H	G_1	G_1	A	—	—	—	—	**6J4**
—	—	3·4 3·8 3·8 3·8	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 6950 Ω. Gain = 14.	30	S	H	A	—	G_1	—	H	K	—	—	—	**6J5** **6J5G** **6J5GT** **6J5GT/G**
—	—	1·5	Values per Section. Cathode Resistor 50 Ω.	21	A''	A'	H	H	$G_1{}'$	$G_1{}''$	K	—	—	—	—	**6J6**

E

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6J7 **6J7G** **6J7GT**	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier (Pentode Connected)	H	6·3	0·3	250	2·0	−3	100	0·5	1225	—	> 1·0
		A.F. Amplifier (Triode Connected)				250	6·5	−8	—	—	1900	20	0·0105
6J7G / 1620	**SHARP CUT-OFF PENTODE**	Low Noise Amplifier	H	6·3	0·3	★	★	★	★	★	★	★	★
6J8G	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	250	1·3	(G_1h) −3	($G_{2+4}h$) 100	2·9	Conv. 290	—	4·0
6J8GA	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·45	250	1·3	(G_1h) −3	($G_{2+4}h$) 100	2·9	Conv. 290	—	4·0
6K4	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·15	100	13	−2	—	—	5500	20	3640 ohms
6K5 **6K5G** **6K5GT** **6K5GT/G**	**HIGH μ TRIODE**	A.F. Amplifier	H	6·3	0·3	250	1·1	−3	—	—	1400	70	0·05
6K6G **6K6GT** **6K6GT/G**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	250	Zero Signal 32·0 Max. Signal 33·0	−18	250	Zero Signal 5·5 Max. Signal 10·0	2300	—	0·068
6K7 **6K7G** **6K7GT**	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	7·0	−3	100	1·7	1450	—	0·8
						250	10·5	−3	125	2·6	1650	—	0·6

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·005	Cathode Current Cut-off at − 7 volts grid bias. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·9 meg. Cathode Resistor 2200 Ω. Gain = 200.		S	H	A	G_2	G_3	—	H	K	—	G_1	—	**6J7**
		0·007		30	IS	H	A	G_2	G_3	—	H	K	—	G_1	—	**6J7G**
—	—	0·005	Grids Nos. 2 and 3 connected to plate. As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 14,000 Ω. Gain = 14.		S	H	A	G_2	G_3	—	H	K	—	G_1	—	**6J7GT**
—	—	0·007	★ *For data and notes refer type* 6J7G. *Type* 6J7G/1620 *is especially selected for low microphonics and low hum.*	30	IS	H	A	G_2	G_3	—	H	K	—	G_1	—	**6J7G / 1620**
—	—	0·01	Conversion Conductance = 2 µmhos at − 20 volts grid bias. Osc. Plate Current 5·0 mA. through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000Ω. Osc. G_m = 1600 µmhos.	30	NC	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**6J8G**
—	—	0·01	Conversion Conductance = 2 µmhos at − 20 volts grid bias. Osc. Plate Current 5·0 mA through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000 Ω.	30	NC	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**6J8GA**
—	0·75	—		31	G_1	A	H	A	NC	H	K	A	—	—	—	**6K4**
—	—	2·0 2·0 2·0	*For data as an R.C. Amplifier refer type* 6Q7.	30	S	H	A	NC	NC	—	H	K	—	G_1	—	**6K5 6K5G 6K5GT 6K5GT/G**
7600	3·4	0·5	Total Harmonic Distortion 11%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**6K6G 6K6GT 6K6GT/G**
— — —	— — —	0·005 0·007 0·005	Mutual Conductance = 2 µmhos at − 42·5 volts bias (100 volts screen).	30	S NC S	H H H	A A A	G_2 G_2 G_2	G_3 G_3 G_3	— — —	H H H	K K K	— — —	G_1 G_1 G_1	— — —	**6K7 6K7G 6K7GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6K8 **6K8G** **6K8GT**	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·3	250	2·5	(G_3h) −3	($G_{2+4}h$) 100	6·0	Conv. 350	—	0·6
6L4	**OSCILLATOR TRIODE**	Amplifier	H	6·3	0·225	80	9·5	See Note	—	—	6400	28	4400 Ohms.
6L5G	**DETECTOR TRIODE**	Amplifier	H	6·3	0·15	250	8·0	−9	—	—	1900	17	9000 Ohms.
6L6 **6L6G** **6L6GA** **6L6GB** **6L6GC**	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	0·9	250	Zero Signal 72·0 Max. Signal 79·0	−14	250	Zero Signal 5·0 Max. Signal 7·3	6000	—	0·0225
		Class "AB_2" Power Amplifier				360	Zero Signal 88·0 Max. Signal 205·0	−22·5	270	Zero Signal 5·0 Max. Signal 16·0	—	—	—
6L7 **6L7G**	**PENTAGRID**	Mixer	H	6·3	0·3	250	2·4	−3 (G_1)	100 (G_{2+4})	7·1	Conv. 375	—	> 1·0
		R.F. Amplifier				250	5·3	−3	100	6·5	1100	—	0·6
6M5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·71	250	36·0	See Note	250	5·2	10,000	—	0·04
						200	30·0		200	4·1	—	—	—
						150	20·0		150	2·7	—	—	—
		Class "AB_1" Power Amplifier				250	Zero Signal 2 x 36·0 Max. Signal 2 x 39·5	See Note	250	Zero Signal 2 x 5·2 Max. Signal 2 x 8·0	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·03	Conversion Conductance = 2 μmhos at − 30 volts grid (G_3) bias.	30	S	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	**6K8**
		0·08	Triode Plate 100 volts 3·8 mA. Osc. Grid Current 0·15 mA.		NC	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	**6K8G**
		0·08	Osc. Grid Resistor 50,000 Ω. Osc. G_m = 3000 μmhos.		S	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$ $G_1{}^t$	A^t	H	K	—	$G_3{}^h$	—	**6K8GT**
—	—	1·6	Cathode Bias Resistor = 150 Ω.	25	H	G	A	A	G	H	K	—	—	—	—	**6L4**
—	—	2·7	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 10,750 Ω. Gain = 13.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**6L5G**
2500	6·5	6L6GC 0·6	Total Harmonic Distortion 10%.	30	S	H	A	G_2	G_1	—	H	K G_3	—	—	—	**6L6**
3800 Plate to Plate	47·0		Peak Signal Grid to Grid Voltage 72. Values are for two tubes. Total Harmonic Distortion 2%.		NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**6L6G** **6L6GA** **6L6GB** **6L6GC**
—	—	0·001	Conversion Conductance = 5 μmhos at − 30 volts grid (G_1) bias. Osc. Injector grid (G_3) − 10 volts bias. Peak Oscillator grid (G_3) volts = 12 min.	30	S	H	A	G_2 G_4	G_3	—	H	K G_5	—	G_1	—	**6L7**
—	—	0·005	Mutual Conductance = 5 μmhos at − 15 volts grid (G_1 and G_3 simultaneously) bias.		NC	H	A	G_2 G_4	G_3	—	H	K G_5	—	G_1	—	**6L7G**
7000 7000 7000	3·9 2·75 1·3	1·0	Cathode bias resistors :— 170 Ω 140 Ω 160 Ω Total harmonic distortion 10% in each case.	32	G_2	G_1	K G_3	H	H	IC	A	IC	NC	—	—	**6M5**
7000 Plate to Plate	9·4		Cathode bias resistor 85 Ω. Total harmonic distortion 4·6%. R.M.S. Grid to Grid input voltage = 11·2 V.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
6N3	**HALF-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier (two valves)	H	6·3	0·9	Max. R.M.S. 2 × 300	Max. D.C. Output 360	—	—	—	—	—	—
6N5	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·15	Target Volts 135	Target Current 2·0	−10 For Shadow Angle 0°	—	—	—	—	—
6N6G	**DIRECT COUPLED POWER AMPLIFIER**	A.F. Amplifier and Class "A" Power Amplifier	H	6·3	0·8	300 300	9 42	Internally Developed	— —	— —	Input to Output 2400	58	— 0·024
6N7 **6N7G** **6N7GT** **6N7GT/G**	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier and A.F. Amplifier	H	6·3	0·8	300	35·0 Min. 70·0 Max.	0	—	—	—	—	—
6N8	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	5·0	−2	85*	1·75	2200	—	1·4
6P5G **6P5GT** **6P5GT/G**	**AMPLIFIER TRIODE**	A.F. Amplifier	H	6·3	0·3	250 100	5·0 2·5	−13·5 −5·0	— —	— —	1450 1150	13·8 13·8	9500 Ohms. 12000
6P7G	**TRIODE REMOTE CUT-OFF R.F. PENTODE**	Amplifier	H	6·3	0·3	100 250	3·5 6·5	−3 −3	— 100	— 1·5	500 1100	8 —	0·016 0·85
6Q4	**V.H.F. TRIODE**	Grounded Grid Amplifier	H	6·3	0·48	250	15·0	−1·5	—	—	12000	80	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Direct Output Voltage 268. Min. Plate Supply Impedance per plate 110 Ω. Input Capacitor to filter 60 μF. max.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**6N3**
—	—	—	Triode Plate Resistor 0·25 meg. Triode Plate Current = 0·5 mA.	17	H	A	G_1^t	T	K	H	—	—	—	—	—	**6N5**
—	—	—	Input Triode.	30	NC	H	A^o	A^i	G_1^i	—	H	K	—	—	—	**6N6G**
7000	4·0	—	Output Triode. Total Harmonic Distortion 5%.													
8000 Plate to Plate	10·0	—	Peak Grid Current = 22·0 mA. per unit. Peak A.F. Grid to Grid volts = 82. Total Harmonic Distortion 8%. Third Harmonic Distortion 7·5%. Fifth Harmonic Distortion 2·5%. Values are for the two units. As R.C. Phase Inverter (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Cathode Resistor 6100 Ω. Gain = 24.	30	S	H	A''	G_1''	G_1'	A'	H	K	—	—	—	**6N7**
					NC	H	A''	G_1''	G_1'	A'	H	K	—	—	—	**6N7G** **6N7GT** **6N7GT/G**
—	—	0·0025	Mutual Conductance = 22 μmhos at − 41·5 volts grid bias. *Series Screen Resistor 95,000 Ω (250 volts supply). As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Screen Resistor 0·82meg. Cathode Resistor 1800 Ω. Gain = 110.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**6N8**
— —	— —	2·6 2·6 2·6	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 18,300 Ω. Gain = 10.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**6P5G** **6P5GT** **6P5GT/G**
—	—	2·0	Triode Unit.	30	NC	H	H	A^p	G_2	A^t	G_1^t	K	—	G_1^p	—	**6P7G**
—	—	0·008	Pentode Unit $\left\{\begin{array}{l}G_m = 10\mu\text{mhos} \\ \text{at} - 35\text{ V. bias.}\end{array}\right.$													
—	—	3·4		32	G_1	G_1	K	H	H	NC	G_1	G_1	A	—	—	**6Q4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6Q7 6Q7G 6Q7GT	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	1·0	−3	—	—	1200	70	0·058
6R3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	0·81	Peak Inverse 5600 (absolute max.)	Peak 450 (Max.) Average 150 (max.)	—	—	—	—	—	—
6R4	**U.H.F TRIODE**	Oscillator (Up to 1500 Mcs.)	H	6·3	0·2	230 275	18·2 17·0	— —	— —	— —	— —	— —	— —
6R7 6R7G 6R7GT 6R7GT/G	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	9·5	−9	—	—	1900	16	8500 Ohms.
6S2 6S2A	**HALF-WAVE VACUUM RECTIFIER**	E.H.T. Rectifier	H	6·3	0·09	Peak Inverse 22,000 (max.)	Peak 40 (Max.) Average 0·5 (max.)	—	—	—	—	—	—
6S4 6S4-A	**MEDIUM µ TRIODE**	Class "A" Amplifier	H	6·3	0·6	250	26·0	−8·0	—	—	4500	16	3600 ohms
		Vertical Deflection Amplifier				D.C. Plate Voltage .. .. .. 500 max. Peak Positive-pulse Plate Voltage .. 2200 absolute max. Peak Negative-pulse Grid Voltage .. 250 max.							
6S7 6S7G	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	8·5	−3	100	2·0	1750	—	1·0
6S8GT	**TRIPLE DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1100	100	0·091
6SA7 6SA7GT 6SA7GT/G	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250	3·5	0	(G_{2+4}) 100	8·5	Conv. 450	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·4	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·47 meg. Cathode Resistor = 6300 Ω. Gain = 50.	30	S	H	A	D_2	D_1	—	H	K	—	G_1	—	**6Q7**
		1·5			NC	H	A	D_2	D_1	—	H	K	—	G_1	—	**6Q7G**
		1·6			S	H	A	D_2	D_1	—	H	K	—	G_1	—	**6Q7GT**
—	—	—	Boost Capacitor = 4 µF. max. Voltage between cathode and heater during flyback = 5600 absolute max.	32	IC	IC	IC	H	H	IC	IC	IC	A	K	—	**6R3**
—	0·7	1·5	750 Mc/s. Grid Current = 1·8 mA.	32	G_1	NC	K	H	H	NC	NC	A	NC	—	—	**6R4**
—	1·8		375 Mc/s. Grid Current = 3·0 mA.													
—	—	2·4	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Cathode Resistor 13,000 Ω. Gain = 12.	30	S	H	A	D_2	D_1	—	H	K	—	G_1	—	**6R7**
		2·4			NC	H	A	D_2	D_1	—	H	K	—	G_1	—	**6R7G**
		2·2														**6R7GT**
		2·2														**6R7GT/G**
—	—	—	Pins 1, 4, 6, 9 may be used for fixing an anticorona ring. Type 6S2-A has a chemically treated envelope for use under humid conditions.	32	H K IS	H	IS	H K IS	H	H K IS	IC	H	H K IS	A	—	**6S2** **6S2A**
—	—	2·6	* Do not use. Type 6S4 has no Controlled Heater warm-up time. Plate Current = 50 µA. at −23 volts grid bias. 6S4—A Heater warm-up time = 11 secs.	32	* IC	K	* IC	H	H	G_1	* IC	* IC	A	—	—	**6S4**
Cathode Current Peak .. .. 105 mA. max. Average .. .. 30 mA. max. Plate Dissipation .. .. .. 7·5 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)																**6S4—A**
—	—	0·005	Mutual Conductance = 10 µmhos at − 38·5 volts bias.	30	S	H	A	G_2	G_3	—	H	K	—	G_1	—	**6S7**
		0·008			NC	H	A	G_2	G_3	—	H	K	—	G_1	—	**6S7G**
—	—	1·2	K_1 provides stream for D_2, D_3 and Triode Unit. K_2 provides stream for D_1. *For data as R.C. Amplifier refer type* 6SQ7.	30	D_3	K_1	D_1	D_2	K_2	A	H	H	—	G_1	—	**6S8GT**
—	—	0·06	Conversion Conductance = 2 µmhos at − 35 volts grid (G_3) bias. Coupling Coil in Cathode Lead. Osc. Grid (G_1) Current 0·5 mA. Osc. Grid Resistor 20,000 Ω. Osc. G_m = 4500 µmhos.	30	S G_5	H	A	G_2 G_4	G_1	K	H	G_3	—	—	—	**6SA7**
		0·2			NC	H	A	G_2 G_4	G_1	K G_5	H	G_3	—	—	—	**6SA7GT**
		0·2														**6SA7GT/G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6SB7	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250	3·8	(G_3) −1	(G_{2+4}) 100	10·0	Conv. 950	—	1·0
6SB7-Y	**PENTAGRID**	Mixer (Separate Excitation)	H	6·3	0·3	250	3·8	(G_3) −1·0	(G_{2+4}) 100	(G_{2+4}) 10·0	Conv. 950	—	1·0
6SC7	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250	2·0	−2	—	—	1325	70	0·053
6SE7-GT	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	4·5	−1·5	100	1·5	3100	—	1·0
6SF5 **6SF5GT**	**HIGH µ TRIODE**	A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1500	100	0·066
6SF7	**DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·3	250	12·4	−1	100	3·3	2050	—	0·7
6SG7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	9·2	−2·5	150	3·4	4000	—	1·0
						250	11·8	−1	125	4·4	4700	—	0·9
						100	8·2	−1	100	3·2	4100	—	0·25
6SH7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10·8	−1	150	4·1	4900	—	0·9
						100	5·3	−1	100	2·1	4000	—	0·35
6SJ7 **6SJ7GT**	**SHARP CUT-OFF PENTODE**	R.F. and A F. Amplifier (Pentode Connected)	H	6·3	0·3	250	3·0	−3	100	0·8	1650	—	> 1·0
		A.F. Amplifier (Triode Connected)				250	9·2	−8·5	—	—	2500	19	7600 Ohms.
6SK7 **6SK7GT** **6SK7GT/G**	**REMOTE CUT-OFF R F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	9·2	−3	100	2·6	2000	—	0·8

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·13	Osc. Grid (G_1) Resistor 20,000 Ω. Osc. Grid Current 0·35 mA. Conv. Conductance 3·5 μmhos. at − 20 volts grid (G_3) bias.	30	S G_5	H	A	G_2 G_4	G_1	K	H	G_3	—	—	—	**6SB7**
—	—	(G_3—A) 0·13 (G_1—A) 0·06	Total Cathode Current 14·2 mA. Oscillator grid (G_1) Current 0·35 mA. Oscillator Grid (G_1) Resistor 20000 Ω.	30	S G_5	H	A	G_2 G_4	G_1	K	H	G_3	—	—	—	**6SB7-Y**
—	—	2·0	Values are for each unit. As R.C. Phase Inverter (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Cathode Resistor 2980 Ω. Gain = 48.	30	S	A''	G_1''	G_1'	A'	K	H	H	—	—	—	**6SC7**
—	—	0·005	Cathode Resistor 250 Ω. Plate Current = 10 μA. at −5 volts grid bias.	30	NC	H	G_3 IS	G_1	K	G_2	H	A	—	—	—	**6SE7-GT**
—	—	2·4	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor = 0·5 meg. Cathode Resistor 5400 Ω. Gain = 70.	30	S NC	K K	G_1 G_1	— —	A A	— —	H H	H H	— —	— —	— —	**6SF5** **6SF5GT**
—	—	0·004	Mutual Conductance = 10 μmhos at − 35 volts bias.	30	S	G_1	K	G_2	D	A	H	H	—	—	—	**6SF7**
— — —	— — —	0·003	G_m = 40 μmhos at − 17·5 volts bias. G_m = 40 μmhos at − 14·0 volts bias. G_m = 40 μmhos at − 11·5 volts bias.	30	S	H	K	G_1	K	G_2	H	A	—	—	—	**6SG7**
— —	— —	0·003	I_a = 10 μA at − 5·5 volts bias. I_a = 10 μA at − 4·0 volts bias.	30	S	H	K	G_1	K	G_2	H	A	—	—	—	**6SH7**
— —	— —	0·005	For Pentode Connection. Plate Current = 10 μA at − 8 volts grid bias. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·2 meg. Cathode Resistor 1410 Ω. Gain = 238.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6SJ7** **6SJ7GT**
—	—	0·003 0·005 0·005	Mutual Conductance = 10 μmhos at − 35 volts grid bias.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6SK7** **6SK7GT** **6SK7GT/G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6SL7GT	**HIGH µ TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250	2·3	−2	—	—	1600	70	0·044
6SN7GT	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·6	250	9·0	−8	—	—	2600	20	7700 Ohms.
6SN7-GTA 6SN7-GTB	**MEDIUM µ TWIN TRIODE**	Class "A" Amplifier	H	6·3	0·6	250	9·0	−8·0	—	—	2600	20	7700 ohms
		Vertical Deflection Power Amplifier				D.C. Plate Voltage .. .. .. 450 max. Peak Positive-pulse Plate Voltage .. 1500 absolute max. Peak Negative-pulse Grid Voltage .. 250 max.							
		Vertical Deflection Oscillator				D.C. Plate Voltage .. .. .. 450 max. Peak Negative-pulse Grid Voltage .. 400 max.							
6SQ7 6SQ7GT 6SQ7GT/G	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	0·9	−2	—	—	1100	100	0·091
6SR7 6SR7GT	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
6SS7	**REMOTE CUT-OFF R F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	9·0	−3	100	2·0	1850	—	1·0
						100	12·2	−1	100	3·1	1930	—	0·12
6ST7	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·15	250	9·5	−9	—	—	1900	16	8500 Ohms.
6SZ7	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·15	250	1·0	−3	—	—	1200	70	0·0587
						100	0·8	−1	—	—	1150	70	0·061

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	2·8	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**6SL7GT**
—	—	3·8 (t_1) 4·0 (t_2)	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·25 meg. Cathode Resistor 6950 Ω. Gain = 14.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**6SN7GT**
—	—	(G_1'—A') 4·0 (G_1''–A'') 3·8	Plate Current = 10 µA. at −18 volts grid bias. Type 6SN7—GTB has controlled heater warm-up time = 11 secs.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**6SN7-GTA** **6SN7-GTB**
			Cathode Current Peak .. .. 70 mA. max. Average .. .. 20 mA. max. Plate Dissipation either plate .. 5 watts max. both plates .. .. 7·5 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.) Other ratings as for operation as power amplifier.													
—	—	1·6 1·8 1·8	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Cathode Resistor 6100 Ω. Gain = 60.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**6SQ7** **6SQ7GT** **6SQ7GT/G**
★	★	2·4	★ *For data and notes refer type* 6BF6.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**6SR7** **6SR7GT**
— —	— —	0·004	Mutual Conductance = 10 µmhos at − 35 volts grid bias in each case.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**6SS7**
—	—	1·5	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Cathode Resistor 13,000 Ω. Gain = 12.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**6ST7**
— —	— —	1·1	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	30	S	G_1	K	D_2	D_1	A^t	H	H	—	—	—	**6SZ7**

"Miniwatt"

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6T4	**U.H.F. MEDIUM µ TRIODE**	R.F. Amplifier	H	6·3	0·225	80	18·0	See Note	—	—	7000	13	—
		U.H.F. Oscillator				200 Max.	—	—	—	—	—	—	—
6T7G	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·15	250	1·2	−3	—	—	1050	65	0·062
6T8 6T8A	**TRIPLE DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·45	250 100	1·0 0·8	−3 −1	—	—	1200 1300	70 70	0·058 0·054
6U3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	0·9	★	★	—	—	—	—	—	—
6U4–GT	**HALF-WAVE RECTIFIER**	Booster Diode	H	6·3	1·2	Peak Inverse 3850 Max.	Peak 660 (Max.) Average 138 (Max.)	—	—	—	—	—	—
6U5 6U5/6G5 6U5G	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 4·0	−22 For Shadow Angle 0°	—	—	—	—	—
6U7G	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	8·2	−3	100	2·0	1600	—	0·8
6U8 6U8A	**MEDIUM µ TRIODE SHARP CUT-OFF R.F. PENTODE**	Triode Section Class "A" Amplifier	H	6·3	0·45	150	18	See Note	—	—	8500	40	5000 ohms
		Pentode R.F. Amplifier				250	10	See Note	110	3·5	5200	—	0·4
6V3	**HALF-WAVE VACUUM RECTIFIER**	Rectifier 50 Cycles	H	6·3	1·75	Max. R.M.S. 350	D.C. Output 125 Max.	—	—	—	—	—	—
		Booster Diode				Peak Inverse 6000 (absolute max.)	Average 135 (Max.) Peak 600 (Max.)	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·7	Cathode Resistor 150 Ω. Plate Current = 50 µA. at −15 volts grid bias.	21	A	G_1	H	H	K	G_1	A	—	—	—	—	**6T4**
—	—	—	Grid Current 8 mA. max. Cathode Current 30 mA. max. Plate Dissipation 3·5 W. max. Peak Heater Cathode Voltage 50 max. (D.C. component must not exceed 25 volts.)													
—	—	1·7	As R.C. Amplifier (300 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 6300 Ω. Gain = 50.	30	NC	H	A	D_2	D_1	—	H	K	—	G_1	—	**6T7G**
— —	— —	1·7	Type 6T8A has Controlled Heater warm-up time = 11 secs.	32	D_3	D_2	K^d IS	H	H	D_1	K^t K^{d1} K^{d3} IS	G_1	A	—	—	**6T8** **6T8A**
—	—	—	★ *For data and notes refer type* 19X3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**6U3**
—	—	—	Max. Peak Heater Cathode Voltage; with Heater Negative with respect to cathode 3850. With Heater Positive with respect to cathode 110.	30	NC	—	K	—	A	—	H	H	—	—	—	**6U4–GT**
—	—	—	Triode Plate Resistor 1·0 meg.	17	H	A DE	$G_1{}^t$	T	K	H	—	—	—	—	—	**6U5** **6U5/6G5**
			Triode Plate Current 0·24 mA.	30	NC	H	A	T	G	—	H	K	—	—	—	**6U5G**
—	—	0·007	Mutual Conductance = 2 µmhos at − 50 volts grid bias.	30	NC	H	A	G_2	G_3	—	H	K	—	G_1	—	**6U7G**
—	—	1·8	Cathode Resistor 56 Ω. Plate Current = 10 µamp. at −12 volts grid bias.	32	A^t	$G_1{}^p$	G_2	H	H	A^p	K^p G_3 IS	K^t	$G_1{}^t$	—	—	**6U8** **6U8A**
—	—	0·01	Cathode Resistor 68 Ω. Plate Current = 10 µA. at −10 volts grid bias. Type 6U8A has Controlled Heater warm-up time = 11 secs.													
—	—	—	Capacitor Input to Filter 20 µF. Minimum Plate Supply Impedance = 145 Ω.	32	NC	A	NC	H	H	NC	A	NC	A	K	—	**6V3**
—	—	—	Peak Heater Cathode Voltage during flyback = 6750 absolute maximum.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
6V3-A	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·75	Peak Inverse 6000 (absolute max.)	Peak 800 (Max.) Average 135 (max.)	—	—	—	—	—	—
6V4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	R.M.S. 2×250 2×300 2×350 (max.)	Full load D.C. Output 90 90 90	—	—	—	—	—	—
6V6	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·45	250	Zero Signal 45·0 Max. Signal 47·0	−12·5	250	Zero Signal 4·5 Max. Signal 7·0	4100	—	0·052
6V6G **6V6GT** **6V6GT/G** **6V6GTA**		Class "AB$_1$" Power Amplifier				285	Zero Signal 70·0 Max. Signal 92·0	−19	285	Zero Signal 4·0 Max. Signal 13·5	—	—	—
6W4GT	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	6·3	1·2	R.M.S. 350	D.C. Output 125·0	—	—	—	—	—	—
6W6-GT	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	1·2	200	46·0	See Note	125	2·2	8000	—	0·028
		Vertical Deflection Power Amplifier				D.C. Plate Voltage .. .. .. 300 max. Peak Positive-pulse Plate Voltage .. 1200 absolute max. Peak Negative-pulse Grid (G_1) Voltage 250 max.							
6W7G	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·5	1225	—	1·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Peak Heater Cathode Voltage during flyback = 6750 absolute maximum. (D.C. component must not exceed 750 volts.)	32	NC	A	NC	H	H	NC	A	NC	A	K	—	**6V3—A**
—	—	—	Total Effective Plate Supply Impedance per plate 125, 215, 300 Ω respectively. Filter Input Capacitor 50 µF. D.C. Output Voltage 265, 310, 360 volts respectively.	32	A'	IC	K	H	H	IC	A''	IC	IC	—	—	**6V4**
5000	4·5	0·3 for 6V6	Type 6V6GTA has Controlled Heater warm-up time = 11 secs. Total Harmonic Distortion 8%.	30	S	H	A	G_2	G_1	—	H	K	—	—	—	**6V6**
8000 Plate to Plate	14·0	0·7 for 6V6G 6V6GT 6V6GT/G	Peak A.F. Grid to Grid Volts = 38. Total Harmonic Distortion 3·5%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**6V6G 6V6GT 6V6GT/G 6V6GTA**
4000	3·8	0·5	Cathode Resistor 180 Ω. Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**6W6-GT**
Cathode Current Peak .. .. 140 mA. max. Average .. .. 40 mA. max. Plate Dissipation .. .. .. 7·5 watts max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)																
—	—	—	Condenser Input to Filter = 20 µF. Plate Supply Impedance = 145 Ω minimum.	30	NC	NC	K	—	A	—	H	H	—	—	—	**6W4GT**
—	—	0·007	As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·5 meg. Screen Resistor 2·9 meg. Cathode Resistor 2200 Ω. Gain = 200.	30	NC	H	A	G_2	G_3	—	H	K	—	G_1	—	**6W7G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
						Max. R.M.S. 5000	D.C. Output Average 3·0 Max.	—	—	—	—	—	—
6X2	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	6·3	0·09	Peak Inverse 17000 max.	Average 0·35 max.	—	—	—	—	—	—
						Peak Inverse 17000 max.	Average 3·0 max.	—	—	—	—	—	—
6X4	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	0·6	R.M.S. 2 x 325	D.C. Output 70·0	—	—	—	—	—	—
6X5 6X5G 6X5GT 6X5GT/G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	Max. R.M.S. 2 x 325	D.C. Output 70·0 Max.	—	—	—	—	—	—
		Triode Class "A" Amplifier				100	8·5	See Note	—	—	5800	40	6900 ohms
6X8 6X8A	**MEDIUM µ TRIODE SHARP CUT-OFF R.F. PENTODE**	Pentode R.F. Amplifier	H	6·3	0·45	250	7·7	See Note	150	1·6	4600	—	0·75
		Frequency Converter Pentode Mixer				150	6·2	−3·5	150	1·8	Conv. 2100	—	—
		Triode Oscillator at 250 Mc.				150	13·0	—	—	—	—	—	—
6Y6G 6Y6GA 6Y6GT	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	1·25	200	Zero Signal 61·0 Max. Signal 66·0	−14	135	Zero Signal 2·2 Max. Signal 9·0	7100	—	0·0183

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser input to filter = 0·1 µF. max. Plate supply impedance = 0·1 meg. min. Values for operation at 50 c/s. with sinusoidal input voltage.													
—	—	—	Condenser input to filter 0·005 µF. max. Peak plate current = 80 mA. max. with max. pulse duration 0·5% of the time between 2 pulses with a max. of 5 µsecs. Values for use in pulse type E.H.T. Supply.	3	H K	H	A	—	—	—	—	—	—	—	—	6X2
—	—	—	Condenser input to filter 0·01 µF. max. Plate supply impedance 0·1 meg. min. Values for operation at 10 kc/s. to 500 kc/s. with sinusoidal input voltage.													
—	—	—	With less than 10 µF. condenser input to filter, minimum plate supply impedance = 520 Ω per plate. Greater Supply Impedances required for larger input capacities.	21	A'	NC	H	H	NC	A''	K	—	—	—	—	6X4
—	—	—	Condenser Input to Filter = 4 µF. Maximum. Plate Supply Impedance per plate = 150 Ω minimum.		S	H	A''	—	A'	—	H	K	—	—	—	6X5
				30	NC	H	A''	—	A'	—	H	K	—	—	—	6X5G 6X5GT 6X5GT/G
—	—	1·4	Type 6X8A has Controlled Heater warm-up time = 11 secs. Cathode Resistor 100 Ω. Plate Current = 10 µA. at −10 volts grid bias.													
—	—	0·09 max.	Cathode Resistor 200 Ω. Plate Current = 10 µA. at −10 volts grid bias.	32	G_3	G_1^t	A^t	H	H	K	G_1^p	G_2	A^p	—	—	6X8 6X8A
—	—	—	Mixer Grid Resistor = 0·12 MΩ. R.M.S. Oscillator Voltage at Mixer grid = 2·6. Mixer Grid Current 2·0 µA.													
—	0·5	—	Oscillator Grid Resistor = 2700 Ω. Oscillator Grid Current 3·6 mA.													
2600	6·0	0·7	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	6Y6G 6Y6GA 6Y6GT

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6Z7G	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	H	6·3	0·3	180	2 x 4·2 Zero Signal	0	—	—	—	—	—
6ZY5G	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	0·3	Max. R.M.S. 2 x 325	D.C. Output 40·0 Max.	—	—	—	—	—	—
7A4	**DETECTOR TRIODE**	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7A5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·75	125 110	44·0 40·0	−9 −7·5	125 110	3·3 3·0	6000 5800	— —	0·017 0·014
7A6	**TWIN DIODE**	Detector, Rectifier	H	6·3	0·15	Max. R.M.S. 150	D.C. Output 8·0 Max.	—	—	—	—	—	—
7A7	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
7A8	**OCTODE**	Frequency Converter	H	6·3	0·15	250	3·0	(G_4) −3	(G_{3+5}) 100	3·2	Conv. 550	—	0·7
7AD7	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·6	300	28	See Note	150	7·0	9500	—	0·3
7AF7	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250 100 100	9·0 5·0 10·8	See Note	—	—	2100 1900 2600	16 16 17	7600 Ohms. 8400 Ohms. 6500 Ohms.
7AG7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	6·0	See Note	250	2·0	4200	—	0·75
7AH7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	6·8	See Note	250	1·9	3300	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
Plate to Plate 12000	4·2	—	Peak Plate Current = 60·0 mA. per plate. Average Input of 320 mW. applied between grids.	30	NC	H	A''	G_1''	G_1'	A'	H	K	—	—	—	**6Z7G**
—	—	—	With less than 40 μF. condenser input to filter, minimum plate supply impedance = 225 Ω per plate. Greater Supply Impedances required for larger input capacities.	30	NC	H	A''	—	A'	—	H	K	—	—	—	**6ZY5G**
—	—	4·0	★ *For data and notes refer type* 6J5GT.	29	H	A	NC	NC	IC	G_1	K	H	—	—	S	**7A4**
2700 2500	2·2 1·5	—	Total Harmonic Distortion 10%, in each case.	29	H	A	G_2	NC	NC	G_1	K	H	—	—	S	**7A5**
—	—	—	Values for each diode.	29	H	K''	D_2	NC	IS	D_1	K'	H	—	—	S	**7A6**
—	—	0·005	★ *For data and notes refer type* 6SK7GT.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7A7**
—	—	0·15	Conversion conductance = 2 μmhos at − 30 volts grid (G_4) bias. Grid No. 2 current 4·2 mA. through 20,000 Ω (250 volts supply). Osc. Grid (G_1) current 0·4 mA. Osc. Grid Resistor 50,000 Ω.	29	H	A	G_2	G_1	G_3 G_5	G_4	K	H	—	—	S	**7A8**
—	—	0·03	Cathode Bias Resistor = 68 Ω.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7AD7**
— — —	— — —	2·3	Cathode Bias Resistor 1100 Ω. Cathode Bias Resistor 600 Ω. Cathode Bias Resistor 0 Ω.	29	H	K''	A''	G_1''	G_1'	A'	K'	H	—	—	S	**7AF7**
—	—	0·005	Cathode Bias Resistor 250 Ω. Plate Current = 10 μA at − 10 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7AG7**
—	—	0·005	Cathode Bias Resistor 250 Ω. G_m = 35 μmhos at − 20 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7AH7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
7AK7	**SHARP CUT-OFF PENTODE**	Class "A" Amplifier	H	6·3	0·8	150 150	40·0 2·0 Max.	$G_1=0$ $G_3=0$ $G_1=0$ $G_3=-9{\cdot}5$	90 90	21·0 43·0 Max.	5500 —	— —	11500 ohms —
7AN7	**R.F. TWIN TRIODE**	Cascode R.F. Amplifier	H	7·0	0·3	★	★	★	—	—	★	★	—
7B4	**HIGH µ TRIODE**	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7B5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	★	★	★	★	★	★	—	★
7B6	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7B7	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	8·5	−3	100	1·7	1750	1200	0·75
7B8	**PENTAGRID**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
7C4	**U.H.F. DIODE**	Detector, Rectifier	H	6·3	0·15	Max. 117	Max. D.C. Output 5·0	—	—	—	—	—	—
7C5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★
7C6	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·15	250	1·3	−1	—	—	1000	100	0·1
7C7	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·5	1300	—	2·0
7DJ8	**V.H.F. SHARP CUT-OFF TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	7·0	0·3	90	15	−1·3	—	—	12,500	33	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	0·7	For use as a Gating Tube with Suppressor Grid Control. Max. Grid Resistance must not exceed 0·1 mΩ.	29	H	A	G_1	G_3 IS	—	G_1	K	H	—	—	—	**7AK7**
—	—	$(G_1'-A')$ 1·2 $(G_1''-A'')$ 2·3	For use as a TV Cascode R.F. Amplifier operating up to 220 Mc. ★ *For other data and notes refer type* 6CW7.	32	K''	G_1'' IS	A''	H	H	G_1'	K_i'	K_o'	A'	—	—	**7AN7**
—	—	2·4	★ *For data and notes refer type* 6SF5GT.	29	H	A	NC	NC	NC	G_1	K	H	—	—	S	**7B4**
★	★	0·8	★ *For data and notes refer type* 6K6GT.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**7B5**
—	—	1·6	★ *For data and notes refer type* 6SQ7GT.	29	H	A	G_1	IC	D_2	D_1	K IS	H	—	—	S	**7B6**
—	—	0·007	Mutual Conductance = 10 μmhos at − 40 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7B7**
—	—	0·2	★ *For data and notes refer type* 6A8GT.	29	H	A	G_2	G_1	G_3 G_5	G_4	K	H	—	—	S	**7B8**
—	—	—		29	H	NC	NC	A	NC	NC	K	H	—	—	S	**7C4**
★	★	0·4	★ *For data and notes refer type* 6V6GT.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**7C5**
—	—	1·4	As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 4700 Ω. Gain = 65.	29	H	A	G_1	K	D_2	D_1	K	H	—	—	S	**7C6**
—	—	0·007	As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Screen Resistor 2·2 meg. Cathode Resistor 1500 Ω. Gain = 245. Mutual Conductance = 75 μmhos at − 7 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7C7**
—	—	1·4	Equivalent Noise Resistance 300 Ω.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**7DJ8**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
7E6	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7E7	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·3	250	7·5	−3	100	1·6	1300	—	0·7
7F7	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
7F8	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·3	250	6·0	See Note	—	—	3300	48	0·0145
7G7 7G7/1232	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	250	6·0	−2	100	2·0	4500	—	0·8
7H7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10	See Note	150	3·2	4200	—	0·8
7J7	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	250	1·4	−3	100	2·8	Conv. 290	—	1·5
7K7	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	2·3	−2	—	—	1600	70	0·044
7L7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	4·5	−1·5	100	1·5	3100	—	1·0
7N7	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·6	★	★	★	—	—	★	★	★
7Q7	**PENTAGRID**	Frequency Converter	H	6·3	0·3	250	3·5	(G_2) −2	(G_{2+4}) 100	8·5	Conv. 550	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	1·5	★ *For data and notes refer type* 6BF6. *For replacement, consider also type* 6SR7GT.	29	H	A	G_1	IC	D_2	D_1	K	H	—	—	S	**7E6**
—	—	0·005	Mutual Conductance = 2 µmhos at − 42·5 volts Grid Bias.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**7E7**
—	—	1·6	★ *For data and notes refer type* 6SL7GT.	29	H	K''	A''	G_1''	G_1'	A'	K'	H	—	—	S	**7F7**
—	—	1·2	Cathode Bias Resistor 500 Ω. Values for each unit. As R.C. Amplifier (125 V. supply). Following Grid Leak 0·47 meg. Plate Resistor 0·27 meg. Cathode Resistor 2200 Ω. Gain = 36.	29	G_1''	H	A''	K''	K'	A	H	G_1'	—	—	S	**7F8**
—	—	0·007	Cathode Current Cut-off at − 7 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7G7** **7G7/ 1232**
—	—	0·007	Cathode Bias Resistor 180 Ω. Mutual Conductance = 35 µmhos at − 19 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7H7**
—	—	0·03	Osc. Plate Current 5 mA. through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 1400 µmhos. Conversion Conductance = 2 µmhos at − 20 volts Grid Bias.	29	H	A^h	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K $G_5{}^h$ IS	H	—	—	S	**7J7**
—	—	1·7	K_1 Triode Cathode. K_2 Diode Cathode. *For data as R.C. Amplifier refer type* 6SL7GT.	29	H	K_1	A	G_1	D_2	D_1	K_2	H	—	—	S	**7K7**
—	—	0·01	Plate Current Cut-off at − 6 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7L7**
—	—	3·0	★ *For data and notes refer type* 6SN7GT.	29	H	K''	A''	G_1''	G_1'	A'	K'	H	—	—	S	**7N7**
—	—	0·2	Coupling Coil in Cathode Lead. Osc. Grid (G_1) Current = 0·5 mA. Osc. Grid Resistor 20,000 Ω. Osc. G_m 4500 µmhos. Conversion Conductance = 2 µmhos at − 35 volts Grid (G_3) Bias.	29	H	A	G_2 G_4	G_1	G_5	G_3	K	H	—	—	S	**7Q7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
7R7	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	250	6·2	−1	100	1·6	3400	—	1·0
7S7	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	250	1·8	−2	100	3·0	Conv. 525	—	1·25
7V7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	300	10·0	See Note	See Note	3·9	5800	—	0·3
7W7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★
7X6	**FULL-WAVE RECTIFIER**	Full-Wave Voltage Doubler	H	6·3	1·2	R.M.S. 2×117	D.C. Output 75·0 (Max.)	—	—	—	—	—	—
		Half-Wave Rectifier				R.M.S. 235	D.C. Output 75·0 (Max.)	—	—	—	—	—	—
7X7	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250 100	1·9 1·2	−1 0	— —	— —	1500 1000	100 85	0·067 0·085
7Y4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·9	Max. R.M.S. 2 x 325	D.C. Output 70·0 Max.	—	—	—	—	—	—
7Z4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·9	Max. R.M.S. 2 x 325	D.C. Output 100·0	—	—	—	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	0·004	As R.C. Amplifier (250 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Screen Resistor 1·8 meg. Cathode Resistor 1800 Ω. Gain = 255. Mutual Conductance = 2 μmhos at − 20 volts Grid Bias.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**7R7**
—	—	0·03	Osc. Plate Current 5·0 mA through 20,000 Ω (250 volts supply). Osc. Grid Current 0·4 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 1650 μmhos. Conversion Conductance = 2 μmhos at − 21 volts Grid Bias.	29	H	A^h	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K $G_5{}^h$ IS	H	—	—	S	**7S7**
—	—	0·004	Cathode Bias Resistor 160 Ω. Series Screen Resistor 40,000 Ω (300 volts supply). I_a = 10 μA at − 16 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**7V7**
—	—	0·0025	★ *For data and notes refer type* 7V7.	29	H	A	G_2	K	G_3 IS	G_1	K	H	—	—	S	**7W7**
—	—	—	Capacitor Input to Filter 16 μF. Minimum Total Effective Plate Supply Impedance 15 Ω.	29	H	K'	A'	—	—	A''	K''	H	—	—	—	**7X6**
—	—	—	Capacitor Input to Filter 16 μF. Minimum Total Effective Plate Supply Impedance 100 Ω.													
— —	— —	—	K_1 provides the stream for Triode and D_1. K_2 provides the stream for D_2.	29	H	A	G_1	K_1 IS	D_1	D_2	K_2	H	—	—	S	**7X7**
—	—	—	With less than 40 μF Condenser Input to Filter, minimum Plate Supply Impedance per Plate = 150 ohms. Greater Supply Impedances are required for larger Input Capacities.	29	H	NC	A''	NC	NC	A'	K	H	—	—	S	**7Y4**
—	—	—	With less than 40 μF condenser input to filter, minimum plate supply impedance per plate = 75 ohms. Greater supply impedances are required for larger input capacities.	29	H	NC	A''	NC	NC	A'	K	H	—	—	S	**7Z4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
8D3	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
8D8	**SHARP CUT-OFF A.F. PENTODE**	A.F. Amplifier (low noise)	H	6·3	0·15	250	3	−2	140	0·6	1900	—	2·5
9A8	**MEDIUM µ TRIODE REMOTE CUT-OFF R.F. PENTODE**	Frequency Converter	H	9·0	0·3	★	★	★	★	★	★	★	★
9AK8	**TRIPLE DIODE HIGH µ TRIODE**	Detector A.F./R.F. Amplifier	H	9·5	0·3	200	1·0	−2·3	—	—	1400	70	0·05
						100	0·8	−1·0	—	—	1450	70	0·048
9AQ8	**HIGH µ TWIN TRIODE**	R.F. Amplifier	H	9·0	0·3	200	10·0	−2·1	—	—	5800	48	—
						170	10·0	−1·5	—	—	6200	50	—
		Additive Mixer (for TV)				200	5·2	—	—	—	Conv. 2300	—	0·015
9D6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
9D7	**REMOTE CUTOFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	10·0	See Note	100	3·3	8400	—	0·75
9U8 9U8–A	**MEDIUM µ TRIODE SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	9·5	0·3	★	★	★	★	★	★	★	★
10	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	7·5	1·25	425	18·0	−40	—	—	1600	8	5000 Ohms.
11	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	1·1	0·25	135	3·0	−10·5	—	—	440	6·6	0·015
12	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	1·1	0·25	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·005	★ *For data and notes refer type* 6AM6.	21	G_1	K	H	H	A	G_3 S	G_2	—	—	—	—	**8D3**
—	—	0·05 max.	As R.C. Amplifier (250 V. supply): Following Grid Leak 0·68 MΩ. Plate Resistor 0·22 MΩ. Screen Resistor 1·0 MΩ. Cathode Resistor 2200 Ω. Gain 180.	32	G_2	IS	K	H	H	A	IS	G_3	G_1	—	—	**8D8**
—	—	$(G_1^p-A^p)$ 0·025 $(G_1^t-A^t)$ 1·5	★ *For data and notes refer type* 6BL8.	32	A^t	G_1^p	G_2	H	H	A^p	K^p G_3 IS	K^t	G_1^t	—	—	**9A8**
— —	— —	2·0	As R.C. Amplifier (200 V. supply) Following Grid Leak 0·68 mΩ. Plate Resistor 0·22 mΩ. Gain 53 Pin 5 should be grounded. For use in F.M./A.M. receivers.	32	D_3	D_2	K_{d2}	H	H	D_1	IS K_t K_{d1} K_{d3}	G_1	A	—	—	**9AK8**
— — —	— — —	1·5	Plate Resistor 8200 Ω. Grid Resistor 1 mΩ. R.M.S. Oscillator Volt. 2·8	32	A'	G_1'	K'	H	H	A''	G_1''	K''	IS	—	—	**9AQ8**
—	—	0·007	★ *For data and notes refer type* 6CQ6.	21	G_1	K	H	H	A	G_3 IS	G_2	—	—	—	—	**9D6**
—	—	0·01	Cathode Resistor 100 Ω. Mutual Conductance = 7 μmhos at −20 volts grid bias.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**9D7**
—	—	Triode 1·8 Pentode 0·006	★ *For data and notes refer type* 6U8. Type 9U8–A has Controlled Heater warm-up time = 11 secs.	32	A^t	G_1^p	G_2	H	H	A^p	K^p G_3 IS	K^t	G_1^t	—	—	**9U8** **9U8–A**
10,200	1·6	7·0	Second Harmonic Distortion 5%.	8	F	A	G_1	F	—	—	—	—	—	—	—	**10**
—	—	3·3	As Biased Detector adjust zero signal plate current to 0·2 mA. Plate volts = 135 volts, max. Grid Bias − 18 volts, approx.	5	F+	A	F−	G_1	—	—	—	—	—	—	—	**11**
—	—	3·3	★ *For data and notes refer type* 11.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**12**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12A	**DETECTOR AMPLIFIER TRIODE**	Class "A" Power Amplifier and Biased Detector	F	5·0	0·25	135	6·2	−9	—	—	1650	8·5	5100Ω
						180	7·7	−13·5	—	—	1800	8·5	4700Ω
12A4	**MEDIUM µ TRIODE**	Class "A" Amplifier	H	6·3	0·6	250	23·0	−9·0	—	—	8000	20	2500Ω
		Vertical Deflection Power Amplifier		12·6	0·3	D.C. Plate Voltage .. .. .. 450 max. Peak Positive-pulse Plate Voltage .. 1000 absolute max. Plate Dissipation .. .. 5·9 watts max. Peak Negative-pulse Grid Voltage .. 250 max.							
12A5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	12·6 6·3	0·3 0·6	180	Zero Signal 45 Max. Signal 48	−25	180	Zero Signal 8·0 Max. Signal 14·0	2400	—	0·035
12A7	**RECTIFIER POWER OUTPUT PENTODE**	Half-wave Rectifier	H	12·6	0·3	Max. R.M.S. 125	D.C. Output 30 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				135	9·0	−13·5	135	2·5	975	—	0·102
12A8G 12A8GT 12A8GT/G	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12AB5	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	12·6	0·2	250	45·0	−12·5	250	4·5	4100	—	0·05
		Class "A" Push-pull Power Amplifier				250	Zero Signal 70 Max. Signal 79	−15	250	Zero Signal 5·0 Max. Signal 13·0	—	—	—
12AC5	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	7·2	−3·0	See Note	2·1	2300	—	1·0
12AC6	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	12·6	0·55	0	12·6	0·2	730	—	0·5

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
9000 10,650	0·13 0·285	8·5	As Biased Detector adjust zero signal plate current to 0·2 mA. Plate Volts = 180 volts. Grid Bias − 21 volts, approx.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**12A**
—	—	5·6	Plate Current = 50 μA. at −19 volts grid bias. Cathode Current Peak .. .. 105 mA. max. Average .. .. 30 mA. max. Peak Heater Cathode Voltage .. 200 max. (D.C. component must not exceed 100 volts.)	32	K	G_1	H_t	H	H	NC	G_1	NC	A	—	—	**12A4**
3300	3·4	—	Total Harmonic Distortion 11%. Second Harmonic Distortion 6·5%. Third Harmonic Distortion 8%.	19	H	A	G_2	G_1	K	H_t	H	—	—	—	—	**12A5**
— 13,500	— 0·55	— —	Condenser input to filter.	19	H	A^p	$G_2{}^p$	K^r	A^r	K^p	H	—	—	$G_1{}^p$	—	**12A7**
—	—	0·26	★ *For data and notes refer type* 6A8GT.	30	S	H	A	G_3 G_5	G_1	G_2	H	K	—	G_4	—	**12A8G** **12A8GT** **12A8GT/G**
5000 10000 Plate to Plate	4·5 10	0·7 —	Total Harmonic Distortion 8%. Total Harmonic Distortion 5%. Peak A.F. Grid to Grid Input Voltage = 30.	32	G_2	NC	G_1	H	H	G_1	K G_3	G_2	A	—	—	**12AB5**
—	—	< 0·002	Cathode Resistor 325 Ω. Series Screen Resistor 40 kΩ (200 V. supply). Cathode Resistor 325 Ω. Mutual Conductance = 23 μmhos at −34 volts grid bias.	28	H	A	IC	IC	G_2	G_1	K G_3 S	H	—	—	—	**12AC5**
—	—	0·005	Mutual Conductance = 10 μmhos at −5·2 volts grid (G_1) bias.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12AC6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12AD6	**PENTAGRID (for direct use with 12v. car battery)**	Frequency Converter	H	12·6	0·15	12·6	0·45	See Note	G_{2+4} 12·6	1·5	Conv. 260	—	1·0
12AD7	**HIGH µ TWIN TRIODE**	Class "A" Amplifier	H	12·6 6·3	0·225 0·45	250	1·25	−2·0	—	—	1600	100	0·0625
12AE6	**DUO DIODE MEDIUM µ TRIODE (for direct use with 12v. car battery)**	Detector A.F. Amplifier	H	12·6	0·15	12·6	0·75	0	—	—	1000	15	0·015
12AE6A	**DUO DIODE MEDIUM µ TRIODE (for direct use with 12v. car battery)**	Detector A.F. Amplifier	H	12·6	0·15	12·6	0·32	See Note	—	—	715	14·3	0·02
						12·6	1·0	0	—	—	1300	16·7	0·013
12AE7	**TWIN TRIODE WITH DISSIMILAR SECTIONS (for direct use with 12v. car battery)**	Class "A" Amplifier Unit 1	H	12·6	0·45	12·6	1·9	See Note	—	—	4000	13	3250 ohms
		Unit 2				12·6	7·5	See Note	—	—	6500	6·4	985 ohms
12AF6	**SHARP CUTOFF R.F. PENTODE (for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·15	12·6	0·75	0	12·6	0·35	1150	—	0·3
12AH7GT	**TWIN TRIODE**	A.F. Amplifier	H	12·6	0·15	180	7·6	−6·5	—	—	1900	16	8400 Ohms
12AH8	**TRIODE HEPTODE**	Frequency Converter	H	12·6 6·3	0·15 0·3	250	2·6	−3	100	4·4	550	—	1·5
						100	2·5	−3	100	4·5	Conv. 520	—	0·6

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	G_1—A 0·1 G_3—A 0·3	Mixer Grid (G_3) Resistor 2·2 mΩ. Oscillator Grid (G_1) Resistor 33 kΩ. R.M.S. Oscillator Grid (G_1) Voltage 1·6. Oscillator Grid (G_1) Current 50 µA. Conversion Conductance = 5 µmhos at Mixer Grid (G_3) voltage of $-2{\cdot}2$. For use in Auto radios operated from nominal 12 volt battery.	21	G_1	K	H	H	A	G_2 G_4	G_3	—	—	—	—	**12AD6**
—	—	1·8	As R.C. Amplifier (250 V. supply) Following Grid Leak 0·47 mΩ. Plate Resistor 0·27 mΩ. Unbypassed Cathode Resistor 3300 Ω. For use as non-microphonic audio preamplifier.	32	$A^{\prime}$	$G_1^{\prime}$	$K^{\prime}$	H	H	$A^{\prime\prime}$	$G_1^{\prime\prime}$	$K^{\prime\prime}$	H_t	—	—	**12AD7**
—	—	2·0	R.C. Amplifier 14·4 (supply). Plate Resistor 0·47 MΩ. Following Grid Resistor 2·2 MΩ. Grid Leak Resistor 2·2 MΩ. Gain 10.	21	G	K	H	H	D_2	D_1	A^t	—	—	—	—	**12AE6**
—	—	2·0	Grid Resistor 10 MΩ.	21	G^t	K	H	H	D_2	D_1	A^t	—	—	—	—	**12AE6A**
—	—	3·9	Developed across 1·5 MΩ. Resistor.	32	$A^{\prime\prime}$	$G^{\prime\prime}$	$K^{\prime\prime}$	H	H	$A^{\prime}$	$G^{\prime}$	$K^{\prime}$	H_t	—	—	**12AE7**
—	—	3·4	Developed across 1·0 MΩ. Resistor.													
—	—	0·006	Mutual Conductance = 40 µmhos at $-2{\cdot}7$ grid (G_1) bias.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12AF6**
—	—	$3{\cdot}0_{t1}$ $2{\cdot}2_{t2}$	Values are for each unit.	30	$G_1^{\prime\prime}$	$K^{\prime\prime}$	$A^{\prime\prime}$	$K^{\prime}$	$G_1^{\prime}$	$A^{\prime}$	H	H	—	—	—	**12AH7GT**
— —	— —	0·025	Conversion conductance = 5·5 and 5·2 µmhos respectively at − 22 V. grid bias. Triode plate voltage = 100 V. in each case. Triode plate resistor 27000 Ω. (250 V. supply) and 0 Ω (100 V. supply). Osc. grid resistor 47000 Ω in each case. Osc. grid current 0·2 mA. in each case.	32	G_2^h G_4^h	G_1^h	K G_5^h	H	H	A^h	G G_3^h	A^t	H_t	—	—	**12AH8**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	 Voltage Volts	 Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12AJ6	**TWIN DIODE MEDIUM µ TRIODE (for direct use with 12v. car battery)**	Detector A.F. Amplifier	H	12·6	0·15	12·6	0·75	0	—	—	1200	55	0·045
12AJ7	**MEDIUM µ TRIODE R.F. HEPTODE**	Heptode R.F. Amplifier	H	12·6	0·15	200	7·4	−2·3	(G_{2+4}) 117	(G_{2+4}) 4·6	2400	—	0·5
		Triode Class "A" Amplifier				100	13·5	0	—	—	3700	22	—
		Converter (Triode Oscillator)				200	5·4	—	—	—	—	—	—
		Heptode Mixer				200	3·7	−2·3	(G_{2+4}) 119	(G_{2+4}) 8·1	Conv. 775	—	1·0
12AL5	**TWIN DIODE**	Detector, Rectifier	H	12·6	0·15	R.M.S. 117 per Plate	D.C. Output 9·0 per Plate	—	—	—	—	—	—
12AL8	**MEDIUM µ TRIODE SPACE CHARGE GRID TETRODE (for direct use with 12v. car battery)**	Triode Class "A" Amplifier	H	12·6	0·55	12·6	0·5	−0·9 See Note	—	—	1000	13	0·013
		Tetrode Class "A" Amplifier				12·6	Zero Signal 40 Signal Applied 8·0	See Note	—	—	(A—G_2) 15,000	7·2	480 ohms
12AN7	**TRIODE HEXODE**	Frequency Converter	H	12·6	0·112	★	★	★	★	★	★	★	★
12AQ5	**BEAM POWER TETRODE**	Power Output Amplifier	H	12·6	0·225	★	★	★	★	★	★	—	★
12AT6	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12AT7	**HIGH µ TWIN TRIODE**	R.F. Amplifier	H	12·6 6·3	0·15 0·3	250 200 170 100	10·0 11·5 8·5 3·0	−2 −1 −1 −1	— — — —	— — — —	5000 6400 5500 3500	60 66 66 58	— — — —
12AU6	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	2·0	R.C. Amplifier (12·6 V. supply). Plate Resistor 1 mΩ. Following Grid Resistor 2 mΩ. Gain 16.	21	G_1	K	H	H	D_2	D_1	A^t	—	—	—	—	**12AJ6**
—	—	0·006	Series Screen Resistor 18 kΩ. Input Resistance 100 Mc. = 2100 Ω.	32	G_2 G_4	$G_1{}^p$	K G_5 IS	H	H	A^h	G_3	A^t	$G_1{}^t$	—	—	**12AJ7**
—	—	1·0														
—	—	—	Plate Resistor 15 kΩ. Grid (G_{t+3}) Current 230 µA. Grid (G_{t+3}) Resistor 47 kΩ.													
—	—	—	Series Screen (G_{2+4}) Resistor 10 kΩ. Grid (G_{3+t}) Resistor 47 kΩ. Grid (G_{3+t}) Current 230 µA.													
—	—	—	Plate Supply Impedance per plate = 300 Ω, min. In Half-wave service the two units may be used separately or in parallel.	21	K'	A''	H	H	K''	IS	A'	—	—	—	—	**12AL5**
—	—	5·7	Developed across 2·2 MΩ Resistor.	32	A^t	G_2	$G_1{}^{tet}$	H	H	A^{tet}	K^{tet}	G	K^t	—	—	**12AL8**
800	40 mW	Grid No. 2 to Plate 14	Grid No. 1 Voltage (space charge grid) 12·6. Grid No. 1 Current (space charge grid) 75 mA. Grid No. 2 Voltage —0·5 developed across 2·2 MΩ Resistor.													
—	—	0·1	★ *For data and notes refer type* 6AN7.	32	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K IS	H	H	IC	A^h	A^t	$G_3{}^h$ $G_1{}^t$	—	—	**12AN7**
★	★	0·35	★ *For data and notes refer type* 6AQ5.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**12AQ5**
—	—	2·1	★ *For data and notes refer type* 6AT6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**12AT6**
— — — —	— — — —	1·7	Values for each unit.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**12AT7**
—	—	0·0035	★ *For data and notes refer type* 6AU6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12AU6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
12AU7 12AU7-A	**MEDIUM µ** **TWIN TRIODE**	Class "A" Amplifier	H	12·6 6·3	0·15 0·3	250 100	10·5 11·8	−8·5 0	— —	— —	2200 3100	17 20	7700 ohms 6500
		Horizontal Deflection Oscillator				D.C. Plate Voltage .. .. 300 max. Peak Negative Pulse Grid Voltage .. .. 600 max. Cathode Current Peak .. .. 300 mA. max. Average .. .. .. 20 mA. max.							
		Vertical Deflection Oscillator				D.C. Plate Voltage .. .. 300 max. Peak Negative Pulse Grid Voltage .. .. 400 max. Cathode Current Peak .. .. 60 mA. max. Average .. .. .. 20 mA. max.							
12AV6	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12AV7	**MEDIUM µ TWIN TRIODE**	Class "A" Amplifier	H	12·6 6·3	0·225 0·45	150	18	See Note	—	—	8500	41	4800 ohms
12AW6	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	250	7·0	See Note	150	2·0	5000	—	0·8
12AX4-GT 12AX4-GTA	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	12·6	0·6	★	★	—	—	—	—	—	—
12AX7	**HIGH µ TWIN TRIODE**	A.F. Amplifier	H	12·6 6·3	0·15 0·3	250 100	1·2 0·5	−2 −1	— —	— —	1600 1250	100 100	0·0625 0·08
12AY7	**MEDIUM µ TWIN TRIODE**	Class "A" Amplifier	H	12·6 6·3	0·15 0·3	250	3·0	−4·0	—	—	1750	40	—
12AZ7	**HIGH µ TWIN TRIODE**	R.F. Amplifier	H	12·6 6·3	0·225 0·45	250 100	10 3·7	See Note See Note	— —	— —	5500 4000	60 60	0·011 0·015

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	1·5	R.C. Amplifier (300 V. supply). Plate Resistor 0·22 mΩ. Following Grid Resistor 1·0 mΩ. Cathode Resistor 11 kΩ. Gain 12. Structural changes result in type 12AU7–A possessing improved mechanical and electrical qualities.													
			Plate Dissipation .. .. .. 2·75 watts max. Peak Heater Cathode Voltage .. 200 max. (The D.C. component must not exceed 100 volts.)	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**12AU7** **12AU7–A**
			Plate Dissipation .. .. .. 2·75 watts max. Peak Heater Cathode Voltage .. 200 max. (The D.C. component must not exceed 100 volts.)													
—	—	—	★ *For data and notes refer type* 6AV6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**12AV6**
—	—	1·9	Cathode Resistor 56 Ω. Plate Current = 10 μA. at −12 volts grid bias.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**12AV7**
—	—	0·025	Cathode Bias Resistor 200 Ω. Plate Current = 10 μA at − 8 volts Grid Bias.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**12AW6**
—	—	—	★ *For data and notes refer type* 6AX4—GT. Type 12AX4—GTA has Controlled Heater warm-up time of 11 seconds. * Do not use.	30	* NC	* NC	K	—	A	—	H	H	—	—	—	**12AX4–GT** **12AX4–GTA**
— —	— —	1·7	Values for each unit. As R.C. Amplifier (300 volts supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Cathode Resistor 5200 Ω. Gain = 73.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**12AX7**
—	—	1·3	As R.C. Amplifier (150 V. supply). Following Grid Leak 0·1 mΩ. Plate Resistor 0·02 mΩ. Cathode Resistor 2700 Ω. Voltage Gain 12·5 For use as a low noise, low microphonic audio preamplifier.	32	A'	G_1'	K'	H	H	A''	G_1''	K''	H_t	—	—	**12AY7**
— —	— —	1·9	Cathode Resistor 200, 270 Ω respectively. Plate Current = 10 μA. at −12, −5 volts grid bias, respectively.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**12AZ7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12B4–A	**LOW µ POWER TRIODE**	Class "A" Amplifier	H	6·3	0·6	150	34	−17·5	—	—	6300	6·5	1030 ohms
		Vertical Deflection Amplifier		12·6	0·3	D.C. Plate Voltage .. .. .. 550 max. Peak Positive—Pulse Plate Voltage .. 1000 absolute max. Peak Negative—Pulse Grid Voltage .. 250 max.							
12B8GT	**TRIODE REMOTE CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	12·6	0·3	90	2·8	0	—	—	2400	90	0·037
						90	7·0	−3	90	2·0	1800	—	0·2
12BA6	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12BA7	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12BD6	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12BE6	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12BF6	**TWIN DIODE MEDIUM µ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12BH7 12BH7–A	**MEDIUM µ TWIN TRIODE**	Class "A" Amplifier	H	12·6	0·3	250	11·5	−10·5	—	—	3100	16·5	5300 ohms
		Vertical Deflection Amplifier		6·3	0·6	D.C. Plate Voltage .. .. .. 450 max. Peak Positive—Pulse Plate Voltage .. 1500 absolute max. Peak Negative—Pulse Grid Voltage .. 250 max. Peak Negative—Pulse Grid Voltage .. 400 max. (When used as vertical deflection oscillator.)							
12BK5	**BEAM POWER TETRODE**	Power Amplifier	H	12·6	0·6	★	★	★	★	★	★	★	★
12BL6	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	12·6	1·35	0	12·6	0·5	1350	—	0·5
12BN6	**GATED BEAM PENTODE**	Limiter Dis-criminator	H	12·6	0·15	★	★	★	★	★	★	—	★
12BQ6–GTB	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	12·6	0·6	★	★	★	★	★	★	—	★

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	4·8	Plate Current = 200μA. at −32 volts grid bias. Controlled Heater warm-up time = 11 seconds. Cathode Current Peak .. .. 105 mA. max. Average .. .. 30 mA. max. Plate Dissipation .. .. .. 5·5 watts max. Peak Heater Cathode Voltage .. 200 max. (The D.C. component must not exceed 100 volts.)	32	K	G_1	H_t	H	H	NC	G_1	NC	A	—	—	**12B4-A**
— —	— —	2·3 0·15	Triode Unit. Pentode Unit. Mutual Conductance = 2 μmhos at − 42·5 volts Grid Bias.	30	K^p	H	A^p	$G_2{}^p$	A^t	K^t	H	$G_1{}^t$	—	$G_1{}^p$	—	**12B8GT**
—	—	0·0035	★ *For data and notes refer type* 6BA6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12BA6**
—	—	0·19	★ *For data and notes refer type* 6BA7.	32	G_2 G_4	G_1	K	H	H	G_5 IS	G_3	IS	A	—	—	**12BA7**
—	—	0·005	★ *For data and notes refer type* 6BD6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12BD6**
—	—	0·3	★ *For data and notes refer type* 6BE6.	21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**12BE6**
—	—	2·0	★ *For data and notes refer type* 6BF6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**12BF6**
—	—	2·6 each unit.	Controlled Heater warm-up time = 11 seconds. Plate Current = 50 μA. at −23 volts grid bias. Cathode Current Peak .. .. 70 mA. max. Average .. .. 20 mA. max. Plate Dissipation .. .. .. 3·5 watts max. Peak Heater Cathode Voltage .. 200 max. (The D.C. component must not exceed 100 volts.)	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**12BH7** **12BH7-A**
★	★	0·6	★ *For data and notes refer type* 6BK5.	32	A	NC	G_1	H	H	K G_3	G_1	G_2	NC	—	—	**12BK5**
—	—	0·006	Mutual Conductance = 10 μmhos at −6 volts (G_1) bias.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12BL6**
—	—	(G_1–G_3) 0·004	★ *For data and notes refer type* 6BN6.	21	K IS	G_1	H	H	G_2	G_3	A	—	—	—	—	**12BN6**
★	★	0·6	★ *For data and notes refer type* 6BQ6–GTB/6CU6.	30	NC	H	NC	G_2	G_1	H	K G_3	—	A	—	—	**12BQ6-GTB**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12BR7	**DUO DIODE HIGH µ TRIODE**	Class "A" Amplifier	H	12·6 6·3	0·225 0·45	250	10	See Note	—	—	5500	60	0·011
12BV7	**HIGH SLOPE R.F. PENTODE**	Video Amplifier	H	12·6 6·3	0·3 0·6	250	27	See Note	150	6·0	13000	10000	0·085
12BY7 **12BY7-A**	**SHARP CUT-OFF R.F. PENTODE**	Video Amplifier	H	12·6 6·3	0·3 0·6	250	25	See Note	150	6·0	12000	—	0·09
12BZ7	**HIGH µ TWIN TRIODE**	Class "A" Amplifier	H	12·6 6·3	0·3 0·6	250	2·5	−2·0	—	—	3200	100	0·0318
12C8	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12CA5	**BEAM POWER PENTODE**	Class "A" Power Amplifier	H	12·6	0·6	125	37	−4·5	125	4·0	9200	—	0·015
12CN5	**SHARP CUT-OFF PENTODE** **(for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·45	12·6	4·5	See Note	12·6	0·35	3800	—	0·04
12CR6	**DIODE REMOTE CUT-OFF PENTODE**	Class "A" Amplifier	H	12·6	0·15	250	9·6	−2·0	100	2·6	2200	—	0·8
12CT8	**MEDIUM µ TRIODE R.F. PENTODE**	Pentode Class "A" Amplifier	H	12·6	0·3	200	15	See Note	125	3·4	7000	—	0·15
		Triode Class "A" Amplifier				150	9·0	See Note	—	—	4900	40	8200 ohms
12CU5	**BEAM POWER PENTODE**	Class "A" Power Amplifier	H	12·6	0·6	★	★	★	★	★	★	—	★
12CX6	**SHARP CUT-OFF R.F. PENTODE** **(for direct use with 12v. car battery)**	R.F. Amplifier	H	12·6	0·15	12·6	3·0	See Note	12·6	1·4	3100	—	0·04
12DK7	**DOUBLE DIODE TETRODE (for direct use with 12v. car battery)**	Class "A" Driver	H	12·6	0·5	12·6	6·0	See Note	12·6	1·0	5000	—	4000 ohms

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	1·9	Cathode Resistor 200 Ω. Plate Current = 10μA. at −12 volts grid bias.	32	A	G_1	K^t	H	H	D_2	D_1	K^d IS	H_t	—	—	**12BR7**
—	—	0·055	Cathode Resistor 68 Ω. Plate Current = 20μA. at −12 volts grid bias.	32	K	G_1	G_3 IS	H	H	H_t	A	G_2	G_3 IS	—	—	**12BV7**
—	—	0·055	Cathode Resistor 68 Ω. Plate Current = 20 μA. at −10 volts grid bias. Type 12BY7–A has Controlled Heater warm-up time = 11 secs.	32	K	G_1	G_3 IS	H	H	H_t	A	G_2	G_3 IS	—	—	**12BY7** **12BY7–A**
—	—	2·5		32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**12BZ7**
—	—	0·005	★ *For data and notes refer type* 6B8.	30	S	H	A	D_2	D_1	G_2	H	K	—	G_1	—	**12C8**
4500	1·5	0·5	Controlled Heater warm-up time = 11 secs. Total Harmonic Distortion 6%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**12CA5**
—	—	0·25	Developed across 2·2 MΩ Resistor.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**12CN5**
—	—	—	Mutual Conductance = 10 μmhos at −32 volts grid bias.	21	K G_3	D	H	H	A	G_2	G_1	—	—	—	—	**12CR6**
—	—	0·044	Cathode Resistor 82 Ω. Plate Current = 100 μA. at —8 volts grid bias.	32	A^t	G^t	K^t	H	H	A^p	G_2	$G_1{}^p$	K^p G_3	—	—	**12CT8**
—	—	2·2	Cathode Resistor 150 Ω. Plate Current = 100 μA. at —6·5 volts grid bias. Controlled Heater warm-up time = 11 secs.													
★	★	0·7	Controlled Heater warm-up time = 11 seconds. ★ *For data and notes refer type* 6CU5.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**12CU5**
—	—	0·05 max.	Developed across 2·2 MΩ Resistor. Plate Current = 10 μA. at —4·5 volts grid bias.	21	G_1	G_3	H	H	A	G_2	K	—	—	—	—	**12CX6**
—	—	—	Grid No. 1 Resistor 2·2 MΩ.	32	G_1	K	G_2	H	H	D''	A	IC	D'	—	—	**12DK7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
12DL8	**DUO-DIODE SPACE CHARGE GRID TETRODE (for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·55	12·6	Zero Signal 40 Signal Applied 8·0	See Note	—	—	A-G_3 15,000	7·2	480 ohms
12DQ6-A	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	12·6	0·6	★	★	★	★	★	★	—	★
12DQ7	**HIGH SLOPE POWER PENTODE**	Class "A" Amplifier	H	12·6 6·3	0·3 0·6	200	26·0	See Note	125	5·6	10,500	—	0·053
12DS7	**DUO-DIODE SPACE CHARGE GRID TETRODE (for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·4	12·6	Zero Signal 40 Signal Applied 8·0	See Note	—	—	15,000	7·2	480 ohms
12DU7	**DUO DIODE TETRODE (for direct use with 12v. car battery)**	Class "A" A.F. Amplifier	H	12·6	0·25	12·6	12	See Note	12·6	1·5	6200	—	6000 ohms
12DV7	**DUO DIODE MEDIUM μ TRIODE (for direct use with 12v. car battery)**	Class "A" A.F. Amplifier	H	12·6	0·15	12·6	0·4	See Note	—	—	750	14	0·019
12DV8	**DUO DIODE SPACE CHARGE GRID TETRODE (for direct use with 12v. car battery)**	A.F. Amplifier	H	12·6	0·375	12·6	Zero Signal 9 Signal Applied 6·8	See Note	—	—	(A—G_2) 8500	—	900 ohms
12DW7	**TWIN TRIODE WITH DISSIMILAR SECTIONS**	Class "A" Amplifier (Sect. 1)	H	12·6 6·3	0·15 0·3	100	0·5	−1	—	—	1250	100	0·08
		Class "A" Amplifier (Sect. 2)				100	11·8	0	—	—	3100	20	6500 ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
800	40 mW	Grid No. 2 to Plate 14	Grid No. 1 (space charge grid) Voltage 12·6. Grid No. 1 (space charge grid) Current 75 mA. Grid No. 2 (control grid) Voltage −2·0 volts developed across 2·2 MΩ.	32	D_2	K^{tet}	G_1	H	H	A	G_2	K^d IS	D_1	—	—	**12DL8**
★	★	0·55	Controlled Heater warm-up time = 11 seconds. ★ *For data and notes refer type* 6DQ6-A.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**12DQ6-A**
—	—	0·01	Cathode Resistor 68 Ω. Controlled Heater warm-up time = 11 secs. Plate Current = 100 μA. at −9 volts gril bias.	32	K	G_1	G_3 IS	H	H	H_t	A	G_2	G_3 IS	—	—	**12DQ7**
800	40 mW	Grid No. 2 to Plate 12·5	Grid No. 1 (space charge grid) Voltage 12·6. Grid No. 1 (space charge grid) Current 75 mA. Grid No. 2 (control grid) Voltage −0·5 developed across 2·2 MΩ.	32	D_2	NC	G_1	H	H	A	G_2	K	D_1	—	—	**12DS7**
2700	25 mW	0·6	Grid No. 1 Resistor 2·2 MΩ. Total Harmonic Distortion 10%.	32	G_1	K	G_2	H	H	A	D_2	IC	D_1	—	—	**12DU7**
—	—	1·6	Grid No. 1 Resistor 2·2 MΩ. Plate Current = 10 μA. at −2 volts grid bias.	32	K^d IS	D_2	D_1	H	H	A^p	G^p	K^p	H_t	—	—	**12DV7**
1250	5 mW	Grid No. 2 to Plate 12	Grid No. 1 (space charge grid) 12·6. Grid No. 1 (space charge grid) Current 53 mA. Grid No. 2 (control grid) Resistor 4·7 MΩ. Cathode Resistor 18 Ω.	32	D_2	K^{tet}	G_1	H	H	A	G_2	K^d IS	D_1	—	—	**12DV8**
— / —	— / —	1·7 / 1·5	Section 1 is similar to type 12AX7, and Section 2 is similar to type 12AU7.	32	A''	G_1''	K	H	H	A'	G_1'	K'	H_t	—	—	**12DW7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12DW8	**DIODE TWIN TRIODE WITH DISSIMILAR UNITS** (for direct use with 12v. car battery)	Class "A" Amplifier Triode 1	H	12·6	0·45	Supply 12·6	1·9	See Note	—	—	2700	9·5	—
		Triode 2				Supply 12·6	7·5	See Note	—	—	6500	6·4	—
12DY8	**TRIODE TETRODE** (for direct use with 12v. car battery)	Triode Class "A" Amplifier	H	12·6	0·35	12·6	1·2	0	—	—	2000	20	0·010
		Tetrode Class "A" Amplifier				12·6	14·0	See Note	12·6	2·0	6000	—	5000 ohms
12DZ6	**REMOTE CUT-OFF R.F. PENTODE** (for direct use with 12v. car battery)	Class "A" Amplifier	H	12·6	0·19	12·6	4·5	See Note	12·6	2·2	3800	—	0·025
12EA6	**SHARP CUT-OFF PENTODE** (for direct use with 12v. car battery)	Class "A" Amplifier	H	12·6	0·19	12·6	3·2	See Note	12·6	1·4	3800	—	0·032
12EC8	**MEDIUM µ TRIODE SHARP CUT-OFF PENTODE** (for direct use with 12v. car battery)	Pentode Class "A" Amplifier	H	12·6	0·225	12·6	0·66	See Note	12·6	0·28	2000	—	0·75
		Triode Class "A" Amplifier				12·6	2·4	0 See Note	—	—	4700	25	6000 ohms.
12EG6	**PENTAGRID** (for direct use with 12v. car battery)	Class "A" Amplifier	H	12·6	0·15	12·6	0·4	—0·8 (G_1) —0·8 (G_3)	12·6	2·4	(A-G_3) 800	—	0·15
12EK6	**SHARP CUT-OFF R.F. PENTODE** (for direct use with 12v. car battery)	Class "A" Amplifier	H	12·6	0·19	12·6	4·0	See Note	12·6	1·7	4200	—	0·05
12EL6	**DUO DIODE HIGH µ TRIODE** (for direct use with 12v. car battery)	A.F. Amplifier	H	12·6	0·15	12·6	0·75	0	—	—	1200	55	0·045
12EM6	**DIODE POWER TETRODE** (for direct use with 12v. car battery)	A.F. Amplifier	H	12·6	0·5	12·6	Zero Signal 6·0 Signal Applied 2·5	See Note	12·6	1·0	5000	—	4000 ohms

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·8	Grid Resistor 1·5 MΩ. Plate Voltage Dropping Resistor 100 Ω.	32	A''	G''	K''	H	H	A'	G'	K'	D	—	—	**12DW8**
—	—	3·2	Grid Resistor 1·0 MΩ. Plate Voltage Dropping Resistor 100 Ω.													
—	—	1·5	Plate Current = 10 μA. at —2 volts grid bias.	32	G_1^{tet}	K^{tet}	G_2	H	H	A^{tet}	K^t IS	A^t	G^t	—	—	**12DY8**
—	—	0·74	Grid No. 1 Resistor 2·2 MΩ. Plate Current = 20 μA. at —9 volts grid bias.													
—	—	0·05 max.	Grid No. 1 Resistor 10 MΩ. Grid No. 3 Resistor (bypassed) 10 MΩ.	21	G_1	G_3	H	H	A	G_2	K	—	—	—	—	**12DZ6**
—	—	0·04 max.	Grid No. 1 Resistor (bypassed) 10 MΩ. Plate Current = 10 μA. at —3·4 volts grid bias.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**12EA6**
—	—	0·02 max.	Grid No. 1 Resistor 33000 Ω. Plate Current = 10 μA. at —1·6 volts grid bias.	32	G^t	A^t	K^t	H	H	A^p	G_2	K^p G_3 IS	$G_1{}^p$	—	—	**12EC8**
—	—	1·7	Grid Resistor 4700 Ω. Plate Current = 10 μA. at —2·2 volts grid bias.													
—	—	Grid No. 3 to Plate 0·25 max.		21	G_1	K	H	H	A	G_2 G_4	G_3	—	—	—	—	**12EG6**
—	—	0·036 max.	Grid No. 1 Resistor 2·2 MΩ. Plate Current 10 μA. at —3·8 volts grid bias.	21	G_1	G_3	H	H	A	G_2	K	—	—	—	—	**12EK6**
—	—	1·8	As R.C. Amplifier: Plate Supply Voltage 12·6. Grid Resistor 1 MΩ. Plate Load Resistor 1 MΩ. Following Grid Resistor 2 MΩ. Voltage Gain 16.	21	G	A	H	H	D_2	D_1	K	—	—	—	—	**12EL6**
3500	10 mW	—	Grid No. 1 Resistor 2·2 MΩ.	32	G_1	K	G_2	H	H	A	IC	IC	D	—	—	**12EM6**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
12EN6	**POWER PENTODE**	Class "A" Amplifier	H	12·6	0·6	200	50	−9·5	110	2·2	8000	—	0·028
12F5GT	**HIGH μ TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12F8	**DUO DIODE PENTODE (for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·15	12·6	1·0	0	12·6	0·38	1000	—	0·33
12FK6	**DUO DIODE MEDIUM μ TRIODE (for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·15	12·6	1·3	See Note	—	—	1200	7·4	6200
12FM6	**DUO DIODE TRIODE (for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·15	12·6	1·0	See Note	—	—	1300	10	7700 ohms
12FR8	**DIODE TRIODE SHARP CUT-OFF PENTODE (for direct use with 12v. car battery)**	Pentode Class "A" Amplifier	H	12·6	0·32	12·6	1·9	−0·7 See Note	12·6	0·7	2700	—	0·4
		Triode Class "A" Amplifier				12·6	1·0	−0·6 See Note	—	—	1200	10	—
12FX8	**TRIODE HEPTODE (for direct use with 12v. car battery)**	Frequency Converter Heptode	H	12·6	0·3	12·6	0·29	G_1 −1·6 G_3 −0·5	12·6	1·25	300 Conv.	—	0·5
		Triode Section				12·6	1·3	−0·8 See Note	—	—	1400	10	—
12G4	**MEDIUM μ TRIODE**	Class "A" Amplifier	H	12·6	0·15	250	9·0	−8	—	—	2600	20	7700 ohms
12H6	**TWIN DIODE**	Detector Rectifier	H	12·6	0·15	★	★	—	—	—	—	—	—
12J5GT	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·65	Plate Current Cutoff at −35 volts grid bias.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**12EN6**
—	—	2·8	★ *For data and notes refer type* 6F5GT.	30	NC	H	NC	A	NC	—	H	K	—	G_1	—	**12F5GT**
—	—	0·06	Mutual Conductance = 10 μmhos at −5 volts (G_1) bias.	32	D_2	G_2	A	H	H	D_1	K	G_1	G_3	—	—	**12F8**
—	—	1·6	Grid Resistor (bypassed) 2·2 MΩ. Plate Current = 0·08 mA. at −3 volts grid bias.	21	G	K	H	H	D_2	D_1	A	—	—	—	—	**12FK6**
—	—	1·7	Grid Resistor 2·2 MΩ.	21	G	K	H	H	D_2	D_1	A	—	—	—	—	**12FM6**
—	—	0·015 max.	Developed across 2·2 MΩ Grid Resistor.	32	G^t	K^t	$G_1{}^p$	H	H K^p G_3 IS	G_2	A^p	D	A^t	—	—	**12FR8**
—	—	1·7	Grid Resistor 2·2 MΩ. Plate Current = 10 μA. at −3·5 volts grid bias.													
—	—	Grid No. 3 to Plate 0·28 max.	Developed across 2·2 MΩ Grid No. 3 Resistor.	32	G_2 G_4	$G_1{}^h$	A^h	H	K^t H	G^t	K^h G_5 IS	A^t	G_3	—	—	**12FX8**
—	—	1·3	Developed across 2·2 MΩ. Plate Current = 10 μA. at −3·2 volts grid bias.													
—	—	3·4	Plate Current = 10 μA. at −18 volts grid bias.	21	A	IC	H	H	A	G_1	K	—	—	—	—	**12G4**
—	—	—	★ *For data and notes refer type* 6H6.	30	S	H	A''	K''	A'	—	H	K'	—	—	—	**12H6**
—	—	—	★ *For data and notes refer type* 6J5GT.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**12J5GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12J7G **12J7GT** **12J7GT/G**	**SHARP CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12J8	**DUO DIODE POWER TETRODE** **(for direct use with 12v. car battery)**	Audio Driver	H	12·6	0·325	12·6	Zero Signal 12	See Note	12·6	1·5	5500	—	6000 ohms
12K5	**POWER TETRODE (for direct use with 12v. car battery)**	Class "A" Amplifier	H	12·6	0·45	12·6	8·0	G_2 −2·0	G_1 12·6	G_1 85	7000	—	800 ohms
12K7G **12K7GT** **12K7GT/G**	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12K8 **12K8G** **12K8GT**	**TRIODE HEXODE**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12L6-GT	**BEAM POWER TETRODE**	Power Amplifier	H	12·6	0·6	200	46·0	See Note	125	2·2	8000	—	0·028
12L8GT	**TWIN POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	12·6	0·15	180	Zero Signal 13·0 Max. Signal 13·5	−9	180	Zero Signal 2·8 Max. Signal 4·6	2150	—	0·16
12Q7G **12Q7GT** **12Q7GT/G**	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12S7	**DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	12·6	0·1	200	5·0	−2·0	85 See Note	1·5	2000	—	1·0
12S8GT	**TRIPLE DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	0·007 0·005 0·005	★ *For data and notes refer type* 6J7G, 6J7GT *and* 6J7GT/G, respectively.	30	S	H	A	G_2	G_3	—	H	K	—	G_1	—	**12J7G** **12J7GT** **12J7GT/G**
2700	20 mW	0·7	Grid No. 1 Resistor 2·2 MΩ.	32	G_1^{tet}	K^{tet}	G_2	H	H	A^{tet}	K^d	D''	D'	—	—	**12J8**
800	0·035	—	Type 12K5 contains a space charge grid G_1, the control grid being G_2. Source impedance 0·1 mΩ. Total Harmonic Distortion 10%.	21	K	G_2	H	H	G_1	G_1	A	—	—	—	—	**12K5**
—	—	0·007 0·005 0·005	★ *For data and notes refer type* 6K7GT.	30	S	H	A	G_2	G_3	—	H	K	—	G_1	—	**12K7G** **12K7GT** **12K7GT/G**
		0·03			S	H	A^h	G_2^h G_4^h	G_1^h G_1^t	A^t	H	K	—	G_3^h	—	**12K8**
—	—	0·08	★ *For data and notes refer types* 6K8 *and* 6K8GT *respectively.*	30	NC	H	A^h	G_2^h G_4^h	G_1^h G_1^t	A^t	H	K	—	G_3^h	—	**12K8G**
		0·08			S	H	A^h	G_2^h G_4^h	G_1^h G_1^t	A^t	H	K	—	G_3^h	—	**12K8GT**
4000	3·8	0·3	Controlled Heater warm-up time = 11 secs. Cathode Resistor 180 Ω. Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**12L6-GT**
10,000	1·0	0·7	Values for each unit. Total Harmonic Distortion 10%.	30	G_1'	K G_3	G_1''	A''	G_2' G_2''	H	H	A'	—	—	—	**12L8GT**
—	—	1·5 1·6 1·6	★ *For data and notes refer types* 6Q7G *and* 6Q7GT.	30	S	H	A	D_2	D_1	—	H	K	—	G_1	—	**12Q7G** **12Q7GT** **12Q7GT/G**
—	—	0·002	Series Screen Resistor 76000 Ω (200 V. supply). Mutual Conductance = 20 μmhos at −34 volts grid bias. As R.C. Amplifier (170 V. supply). Following grid leak 0·7 mΩ. Plate Resistor 0·22 mΩ. Screen Resistor 0·82 mΩ. Cathode Resistor 2700 Ω. Gain 80.	28	H	A	D	G_3	G_2	G_1	K IS	H	—	—	—	**12S7**
—	—	1·2	★ *For data and notes refer type* 6S8GT.	30	D_3	K_1	D_1	D_2	K_2	A	H	H	—	G_1	—	**12S8GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
12SA7 **12SA7GT** **12SA7GT/G**	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
12SC7	**TWIN TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SF5 **12SF5GT**	**HIGH μ TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SF7	**DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SG7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SH7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SJ7 **12SJ7GT**	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier (Pentode connected) A.F. Amplifier (Triode connected)	H	12·6	0·15	★	★	★	★	★	★	★	★
12SK7 **12SK7GT** **12SK7GT/G**	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
12SL7GT	**HIGH μ TWIN TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SN7GT	**TWIN TRIODE**	A.F. Amplifier	H	12·6	0·3	★	★	★	—	—	★	★	★
12SQ7 **12SQ7GT**	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12SR7	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
12U7	**MEDIUM μ TWIN TRIODE (for direct use with 12v. car battery)**	Class "A" Amplifier (Each Unit)	H	12·6	0·15	12·6	1·0	0	—	—	1600	20	0·0125

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	9·5	★ *For data and notes refer types* 6SA7 *and* 6SA7GT *respectively.*	30	S G_5	H	A	G_2 G_4	G_1	K	H	G_3	—	—	—	**12SA7**
		11·0			NC	H	A	G_2 G_4	G_1	K G_5	H	G_3	—	—	—	**12SA7GT**
		11·0														**12SA7GT/G**
—	—	2·0	★ *For data and notes refer type* 6SC7.	30	S	A''	G_1''	G_1'	A'	K	H	H	—	—	—	**12SC7**
—	—	2·4	★ *For data and notes refer types* 6SF5 *and* 6SF5GT *respectively.*	30	S	K	G_1	—	A	—	H	H	—	—	—	**12SF5**
					NC	K	G_1	—	A	—	H	H	—	—	—	**12SF5GT**
—	—	0·004	★ *For data and notes refer type* 6SF7.	30	S	G_1	K	G_2	D	A	H	H	—	—	—	**12SF7**
—	—	0·003	★ *For data and notes refer type* 6SG7.	30	S	H	K	G_1	K	G_2	H	A	—	—	—	**12SG7**
—	—	0·003	★ *For data and notes refer type* 6SH7.	30	S	H	K	G_1	K	G_2	H	A	—	—	—	**12SH7**
—	—	0·005	★ *For data and notes refer types* 6SJ7 *and* 6SJ7GT *respectively.*	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**12SJ7** **12SJ7GT**
—	—	0·003 0·005 0·005	★ *For data and notes refer types* 6SK7 *and* 6SK7GT *respectively.*	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**12SK7** **12SK7GT** **12SK7GT/G**
—	—	2·8	★ *For data and notes refer type* 6SL7GT.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**12SL7GT**
—	—	$3{\cdot}8_{t_1}$ $4{\cdot}0_{t_2}$	★ *For data and notes refer type* 6SN7GT.	30	G_1''	A''	K''	G_1'	A'	K'	H	H	—	—	—	**12SN7GT**
—	—	1·6 1·8	★ *For data and notes refer types* 6SQ7 *and* 6SQ7GT *respectively.*	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**12SQ7** **12SQ7GT**
—	—	2·4	★ *For data and notes refer type* 6BF6.	30	S	G_1	K	D_2	D_1	A	H	H	—	—	—	**12SR7**
—	—	1·5	Plate Current = 10 μA. at —1·5 volts grid bias.	32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**12U7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
12V6-GT	**BEAM POWER OUTPUT TETRODE**	Audio Power Output Amplifier	H	12·6	0·225	★	★	★	★	★	★	—	★
12W6-GT	**BEAM POWER TETRODE**	Vertical Deflection Amplifier	H	12·6	0·6	★	★	★	★	★	★	—	★
12X4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	12·6	0·3	★	★	—	—	—	—	—	—
12Z3	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	12·6	0·3	Max. R.M.S. 235	Max. D.C. Output 55	—	—	—	—	—	—
14A4	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14A5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	12·6	0·15	250	Zero Signal 30 Max. Signal 32	−12·5	250	Zero Signal 3·5 Max. Signal 5·5	3000	—	0·07
14A7 **14A7/12B7**	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
14AF7	**TWIN TRIODE**	A.F. Amplifier	H	12·6	0·15	250	9·0	See Note	—	—	2100	16	7600 Ohms
14B6	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14B8	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
14C5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier — Class "AB_1" Power Amplifier	H	12·6	0·225	★	★	★	★	★	★	—	★

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	0·7	★ *For data and notes refer type* 6V6–GT.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**12V6–GT**
—	—	0·5	Controlled Heater warm-up time = 11 secs. Peak Heater/Cathode Voltage, with Heater Negative with respect to cathode 300 max. ★ *For other data and notes refer type* 6W6–GT.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**12W6–GT**
—	—	—	★ *For data and notes refer type* 6X4.	21	A''	NC	H	H	NC	A'	K	—	—	—	—	**12X4**
—	—	—	With less than 40 µF Condenser Input to Filter, minimum plate supply impedance = 75 ohms. Greater Supply Impedances are required for larger Input capacities.	8	H	A	K	H	—	—	—	—	—	—	—	**12Z3**
—	—	4·0	★ *For data and notes refer type* 6J5GT. *For replacement, consider also type* 7A4.	29	H	A	NC	NC	IC	G_1	K	H	—	—	S	**14A4**
7500	2·8	0·4	Total Harmonic Distortion = 7%. For Automatic Bias Cathode Resistor 370 Ω.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**14A5**
—	—	0·005	★ *For data and notes refer type* 6SK7GT. *For replacement, consider also type* 12SK7GT.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**14A7** **14A7/ 12B7**
—	—	2·3	Values for each unit. Cathode Bias Resistor 1100 Ω.	29	H	K''	A''	G_1''	G_1'	A'	K'	H	—	—	S	**14AF7**
—	—	1·6	★ *For data and notes refer type* 6SQ7GT. *For replacement, consider also* 7B6 *and* 12SQ7GT.	29	H	A	G_1	IC	D_2	D_1	K' IS	H	—	—	S	**14B6**
—	—	0·2	★ *For data and notes refer type* 6A8GT. *For replacement, consider also types* 7B8 *and* 12A8GT.	29	H	A	G_2	G_1	G_3 G_5	G_4	K	H	—	—	S	**14B8**
★	★	0·4	★ *For data and notes refer type* 6V6GT. *For replacement, consider also type* 7C5.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**14C5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
14C7	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	250	2·2	−3	100	0·7	1575	—	>1·0
14E6	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14E7	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
14F7	**TWIN TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14F8	**TWIN TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14H7	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
14J7	**TRIODE HEPTODE**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★
14K7	**TRIODE HEXODE**	Frequency Converter	H	14·0	0·1	200	3·0	(G_1h) −2·0	($G_{2+4}h$) 85 See Note	3·0	Conv. 750	—	>1·0
14L7	**DUO DIODE TRIODE**	Detector A.F. Amplifier	H	14·0	0·1	170	1·5	−1·55	—	—	1650	70	0·042
14N7	**TWIN TRIODE**	A.F. Amplifier	H	12·6	0·15	★	★	★	—	—	★	★	★
14Q7	**PENTAGRID**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	—	★

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·007	Cathode Current Cut-off at – 7 volts Grid Bias.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**14C7**
★	★	1·5	★ *For data and notes refer type* 6BF6. *For replacement, consider also types* 7E6 *and* 12SR7.	29	H	A	G_1	IC	D_2	D_1	K	H	—	—	S	**14E6**
—	—	0·005	★ *For data and notes refer type* 7E7.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**14E7**
—	—	1·6	★ *For data and notes refer type* 6SL7GT. *For replacement, consider also types* 7F7 *and* 12SL7GT.	29	H	K''	A''	G_1''	G_1'	A'	K'	H	—	—	S	**14F7**
—	—	1·2	★ *For data and notes refer type* 7F8.	29	G_1''	H	A''	K''	K'	A'	H	G_1'	—	—	S	**14F8**
—	—	0·007	★ *For data and notes refer type* 7H7.	29	H	A	G_2	G_3	IS	G_1	K	H	—	—	S	**14H7**
—	—	0·03	★ *For data and notes refer type* 7J7.	29	H	A^h	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K $G_5{}^h$ IS	H	—	—	S	**14J7**
—	—	$G_1{}^t - A^t$ 1·3 $G_1{}^h - A^h$ $< 0·1$	Screen connected to junction of two resistors R_1 and R_2 in series, R_1 of 18000 Ω is connected to B+ and R_2 of 27000 Ω is connected to B– Conversion conductance = 7·5 μmhos at –27·5 volts grid ($G_1{}^h$) bias. Oscillator plate current 5·2 mA. through 22000 Ω (200 V. supply). Osc. Grid Resistor 47000 Ω. Osc. grid current 0·2 mA.	28	H	A^h	A^t	$G_1{}^t$ $G_3{}^h$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K IS	H	—	—	—	**14K7**
—	—	1·3	As R.C. Amplifier (170 V. supply). Following grid leak 0·68mΩ Plate Resistor 0·22 mΩ. Cathode Resistor 5600 Ω. Gain 44.	28	H	A	G_1	IS	D_2	D_1	K	H	—	—	—	**14L7**
—	—	3·0	★ *For data and notes refer type* 6SN7GT. *For replacement consider also types* 7N7 *and* 12SN7GT.	29	H	K''	A''	G_1''	G_1'	A'	K'	H	—	—	S	**14N7**
—	—	0·2	★ *For data and notes refer type* 7Q7.	29	H	A	G_2 G_4	G_1	G_5	G_3	K	H	—	—	S	**14Q7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
14R7	**DUO-DIODE MEDIUM CUT-OFF PENTODE**	Detector A.F. and R.F. Amplifier	H	12·6	0·15	★	★	★	★	★	★	—	★
14S7	**TRIODE HEPTODE**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	★	★
15	**R.F. PENTODE**	R.F. Amplifier	H	2·0	0·22	135	1·85	− 1·5	67·5	0·3	750	—	0·8
15A6	**VIDEO OUTPUT PENTODE**	Video Amplifier	H	15·0	0·3	200 170	36 36	−3·5 −2·3	200 170	5·0 5·0	10,500 10,500	— —	0·1 0·1
15CW5	**POWER PENTODE**	Class "A" Amplifier	H	15·0	0·3	★	★	★	★	★	★	—	★
15DQ8	**HIGH µ TRIODE POWER PENTODE**	Video Amplifier	H	15·0	0·3	★	★	★	★	★	★	★	★
16A5	**POWER PENTODE**	Class "A" Amplifier	H	16·5	0·3	200	45	−13·9	See Note	8·5	7600	—	0·024
		Vertical Deflection Amplifier				D.C. Plate Voltage .. .. 450 max. Peak Positive Pulse Plate Voltage .. .. 2500 max. Peak Negative Pulse Plate Voltage .. .. 500 max. Plate Dissipation .. .. 4·5 watts max.							
16A8	**HIGH µ TRIODE POWER PENTODE**	Triode A.F. Amplifier Pentode Power Amplifier	H	16	0·3	★	★	★	★	★	★	—	★
17AX4-GT	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	16·8	0·45	★	★	—	—	—	—	—	—
17BQ6-GTB	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	16·8	0·45	★	★	★	★	★	★	—	★
17C8	**DUO DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	17	0·1	200	5·0	−2·0	See Note	1·75	2200	—	1·0
17DQ6-A	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	16·8	0·45	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·004	★ *For data and notes refer type* 7R7.	29	H	A	D_2	D_1	G_2	G_1	K G_3	H	—	—	S	**14R7**
—	—	0·03	★ *For data and notes refer type* 7S7.	29	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K G_5^h IS	H	—	—	S	**14S7**
—	—	0·01		15	H	A	G_2	K G_3	H	—	—	—	—	G_1	—	**15**
— —	— —	0·1		32	G_2	G_1	K	H	H	G_3	A	IS	NC	—	—	**15A6**
★	★	0·6	★ *For data and notes refer type* 6CW5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**15CW5**
★	★	T < 0·1 P 2·7	★ *For data and notes refer type* 6DX8.	32	G^t	A^t	K^t	H	H	A^p	K^p G_3 IS	G_1^p	G_2^p	—	—	**15DQ8**
4000	4·2	1·0	Series Screen Resistor 680Ω. D.C. Screen Grid Voltage .. .. 250 max. Peak Heater Cathode Voltage .. 200 max. Average Cathode Current .. .. 75 max.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**16A5**
★	★	0·3	★ *For data and notes refer type* 6BM8.	32	G^t_1	K^p G_3 IS	G_1^p	H	H	A^p	G_2^h	K^t	A^t	—	—	**16A8**
—	—	—	Controlled Heater warm-up time = 11 secs. * Do not use. ★ *For data and notes refer type* 6AX4-GT.	30	* NC	* NC	K	—	A	—	H	H	—	—	—	**17AX4-GT**
—	—	0·55	Controlled Heater warm-up time = 11 secs. ★ *For data and notes refer type* 6BQ6-GTB.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**17BQ6-GTB**
—	—	0·0025	Series Screen Resistor 68000 Ω (200 V. supply). Mutual Conductance = 22 µmhos at −31·5 volts grid bias.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**17C8**
—	—	0·55	Controlled Heater warm-up time = 11 secs. ★ *For data and notes refer type* 6DQ6-A.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**17DQ6-A**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
17Z3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	17·0	0·3	★	★	—	—	—	—	—	—
19	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	2·0	0·26	★	★	★	—	—	—	—	—
19AU4	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	18·9	0·6	Peak Inverse 4500 (absolute max.)	Peak 1050 (max.) Average 175 (max.)	—	—	—	—	—	—
19BG6-GA	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	18·9	0·3	★	★	★	★	★	★	—	★
19D8	**TRIODE HEPTODE**	Frequency Converter	H	19	0·1	200	3·7	−2·6 See Note	119 See Note	8·1	Conv. 775	—	1·0
19J6	**TWIN TRIODE**	R.F. Amplifier	H	18·9	0·15	100	8·5	See Note	—	—	5300	38	7100 Ohms
19T8	**TRIPLE DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	18·9	0·15	★	★	★	—	—	★	★	★
19X3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	19·0	0·3	Peak Inverse 4000 Max. ★	Average 180 Max. Peak 400 Max.	—	—	—	—	—	—
19X8	**MEDIUM μ TRIODE SHARP CUTOFF R.F. PENTODE**	Frequency Converter	H	18·9	0·15	★	★	★	★	★	★	—	★
19Y3	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	19·0	0·3	Max. R.M.S. 250	D.C. Output 180 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *Refer type* 6R3	32	IC	IC	IC	H	H	IC	IC	IC	A	K	—	**17Z3**
★	★	—	★ *For data and notes refer type* 1J6G.	17	F+	A''	G_1''	G_1'	A'	F−	—	—	—	—	—	**19**
—	—	—	Max. Plate Dissipation 6 watts. Peak Heater Cathode Voltage with heater negative with respect to cathode 4500 absolute maximum. With heater positive with respect to cathode 300. (The D.C. component must not exceed 100 volts). Controlled Heater warm-up time = 11 seconds. * Do not use.	30	* NC	* NC	K	—	A	—	H	H	—	—	—	**19AU4**
—	—	0·8	★ *For data and notes refer type* 6BG6–G.	30	NC	H	K G_3	NC	G_1	NC	H	G_2	—	A	—	**19BG6–GA**
—	—	0·006	Conversion Conductance 7·75 µmhos at −28 volts grid (G_1^h) bias. Cathode Resistor 150 Ω. Oscillator Plate Current 5·4 mA. through 15000 Ω (200 V. supply). Osc. Grid Resistor 47000 Ω. Osc. Grid Current 0·23 mA. Series Screen Resistor 10000 Ω. (200 V. supply).	32	G_2^h G_4^h	G_1^h	IS K G_5^h	H	H	A^b	G_3^h	A^t	G_1^t	—	—	**19D8**
—	—	1·5	Values for each unit. Cathode Resistor 50 Ω.	21	A''	A'	H	H	G_1'	G_1''	K	—	—	—	—	**19J6**
—	—	2·2	★ *For data and notes refer type* 6T8.	32	D_3	D_2	K_1	H	H	D_1	K_2	G_1	A	—	—	**19T8**
—	—	—	★ Max. pulse duration 18% of one cycle with maximum of 18 µsecs.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**19X3**
—	—	Triode 1·4 Pentode 0·09	★ *For data and notes refer type* 6X8.	32	G_3	G_1^t	A^t	H	H	K	G_1^p	G_2	A^p	—	—	**19X8**
—	—	—	Condenser input to filter 60 µF maximum. Plate supply impedance = 125 Ω minimum.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**19Y3**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
20	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	3·3	0·132	135	6·5	−22·5	—	—	525	3·3	6300 Ohms
20AV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	150	0·01	—	—	—	—	—	—
20CG	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90	0·005	—	—	—	—	—	—
20CV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100	0·01	—	—	—	—	—	—
21A6	**POWER PENTODE**	Horizontal Deflection Amplifier	H	21·5	0·3	★	★	★	★	★	★	—	★
22	**R.F. TETRODE**	R.F. Amplifier	F	3·3	0·132	135	3·7	−1·5	67·5	1·3	500	—	0·325
24A	**R.F. TETRODE**	R.F. Amplifier	H	2·5	1·75	250	4·0	−3	90	1·7	1050	—	0·6
25A6 **25A6G** **25A6GT** **25A6GT/G**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	25·0	0·3	160	Zero Signal 33·0 Max. Signal 36·0	−18	120	Zero Signal 6·5 Max. Signal 12·0	2375	—	0·042
25A7G **25A7GT** **25A7GT/G**	**RECTIFIER POWER OUTPUT PENTODE**	Half-wave Rectifier	H	25·0	0·3	R.M.S. 117	D.C. Output 75 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				100	Zero Signal 20·5	−15	100	Zero Signal 4·0	1800	—	0·05
25AC5G **25AC5GT** **25AC5GT/G**	**HIGH μ POWER OUTPUT TRIODE**	Class "B" Power Amplifier (two valves)	H	25·0	0·3	180	Zero Signal 4·0	0	—	—	—	—	—
25AV5-GT	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	25	0·3	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
6500	0·11	4·1		8	F+	A	G_1	F−	—	—	—	—	—	—	—	**20**
—	—	—	For daylight and bluish light Sensitivity = 45 μA/Lumen at 2700° K. Dark current 0·05 μA at 150 v. Caesium-Antimony Cathode.	30	NC	A	NC	K	NC	A	NC	NC	—	—	—	**20AV**
—	—	—	For incandescent light and near infra-red Sensitivity = 150 μA/Lumen at 2700° K. Dark current at 90 v. = 0·1 μA. Gas amplification factor = 10 max. Caesium on Oxidised Silver Cathode.	30	NC	K	NC	NC	NC	K	NC	A	—	—	—	**20CG**
—	—	—	For incandescent light and near infra-red, Sensitivity = 25 μA/Lumen at 2700° K. Dark current at 250 v. = 0·05 μA. Caesium on Oxidised Silver Cathode.	30	NC	K	NC	NC	NC	K	NC	A	—	—	—	**20CV**
—	—	0·8	★ *Refer type* 6CJ6.	32	IC	G_1	K	H	H	IC	IC	G_2	G_3	A	—	**21A6**
—	—	0·02		8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**22**
—	—	0·007		15	H	A	G_2	K	H	—	—	—	—	G_1	—	**24A**
5000	2·2	0·2	Total Harmonic Distortion 10%.	30	S	H	A	G_2	G_1	—	H	K G_3	—	—	—	**25A6**
					NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**25A6G** **25A6GT** **25A6GT/G**
—	—	—	Condenser input to filter 16 μF. Plate supply impedance 15 Ω minimum.	30	K^r	H	A^p	$G_2{}^p$	$G_1{}^p$	A^r	H	K^p $G_3{}^p$	—	—	—	**25A7G** **25A7GT** **25A7GT/G**
4500	0·77	—	Total Harmonic Distortion 9%.													
4800 Plate to Plate	6·0	—	Values are for two tubes. Peak Input Power = 810 mV. Peak A.F. Grid to Grid volts = 60.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**25AC5G** **25AC5GT** **25AC5GT/G**
—	—	0·7	★ *For data and notes refer type* 6AV5–GT.	30	G_1	H	K G_3	—	A	—	H	G_2	—	—	—	**25AV5–GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
25B6G	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	25·0	0·3	200	Zero Signal 62·0 Max. Signal 71·0	−23	135	Zero Signal 1·8 Max. Signal 13·0	5000	—	0·018
25BQ6-GT	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	25	0·3	★	★	★	★	★	★	—	★
25BQ6-GTB	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	25	0·3	★	★	★	★	★	★	—	★
25CD6-GA	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	25	0·6	★	★	★	★	★	★	—	★
25DN6	**BEAM POWER TETRODE**	Horizontal Deflection Amplifier	H	25	0·6	★	★	★	★	★	★	—	★
25E5	**POWER PENTODE**	Horizontal Deflection Amplifier	H	25	0·3	★	★	★	★	★	★	—	★
25L6	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	25·0	0·3	200	Zero Signal 50·0 Max. Signal 55·0	−8	110	Zero Signal 2·0 Max. Signal 7·0	9500	—	0·03
25L6G **25L6GT** **25L6GT/G**	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	25·0	0·3	200	Zero Signal 46·0 Max. Signal 47·0	See Note	125	Zero Signal 2·2 Max. Signal 8·5	8000	—	0·028
25W4-GT	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	25	0·3	★	★	—	—	—	—	—	—
25Y5	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	Max. R.M.S. 235	D.C. Output 75·0 Max. per Plate	—	—	—	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	R.S	TYPE No.
2500	7·1	—	Total Harmonic Distortion 15%. Second Harmonic Distortion 8·5%. Third Harmonic Distortion 11%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**25B6G**
—	—	0·6	★ *For data and notes refer type* 6BQ6–GT.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**25BQ6–GT**
—	—	0·6	★ *For data and notes refer type* 6BQ6–GTB.	30	NC	H	NC	G_2	G_1	—	H	K G_3	—	A	—	**25BQ6–GTB**
—	—	0·8	Controlled Heater warm-up time = 11 seconds. Peak Heater Cathode Voltage 200 max. (The D.C. component must not exceed 100 volts.) ★ *For data and notes refer type* 6CD6–G.	30	NC	H	K G_3	—	G_1	—	H	G_2	—	A	—	**25CD6–GA**
—	—	0·8	Controlled Heater warm-up time = 11 seconds. ★ *For data and notes refer type* 6DN6.	30	NC	H	K G_3	—	G_1	—	H	G_2	—	A	—	**25DN6**
★	★	1·1	Peak Heater Cathode Voltage with cathode positive 250 max with cathode negative 200 max ★ *For other data and notes refer type* 6CM5.	30	IC	H	IC	G_2	G_1	—	H	K G_3	—	A	—	**25E5**
3000	4·3	0·3	Total Harmonic Distortion 10%.	30	S	H	A	G_2	G_1	—	H	K G_3	—	—	—	**25L6**
		—	Cathode Bias Resistor 180 Ω.		S	H	A	G_2	G_1	—	H	K G_3	—	—	—	**25L6G**
4000	3·8	0·8	Total Harmonic Distortion 10%.	30												
		0·8			NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**25L6GT** **25L6GT/G**
—	—	—	★ *For data and notes refer type* 6W4–GT.	30	NC	NC	K	—	A	—	H	H	—	—	—	**25W4–GT**
—	—	—	In half-wave service the two units may be used separately or in parallel. With less than 40 μF condenser input to filter plate supply impedance per plate = 0 Ω. Greater supply impedances required for larger input capacities.	17	H	A″	K″	K′	A′	H	—	—	—	—	—	**25Y5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
25Z4G	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	Max. R.M.S. 250	D.C. Output 100 Max.	—	—	—	—	—	—
25Z5	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	★	★	—	—	—	—	—	—
25Z6 **25Z6G** **25Z6GT** **25Z6GT/G**	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	25·0	0·3	R.M.S. 235	D.C. Output 75·0 Max. per Plate	—	—	—	—	—	—
26	**TRIODE**	Class "A" Amplifier	F	1·5	1·05	180	6·2	−14·5	—	—	1150	8·3	7300 Ohms
27	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	H	2·5	1·75	250	5·2	−21	—	—	975	9	9250 Ohms
30	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier Class "B" Power Amplifier	F	2·0	0·06	★	★	★	—	—	★	★	★
30A5	**POWER OUTPUT PENTODE**	Class "A" Amplifier	H	30	0·15	100	43	−6·7	100	3·0	9200	—	0·022
30AE3	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	30	0·3	★	★	—	—	—	—	—	—
31	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	2·0	0·13	135 180	8·0 12·3	−22·5* −30†	— —	— —	925 1050	3·8 3·8	4100Ω 3600Ω
31A3	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	31	0·1	Max. R.M.S. 250	D.C. Output 100 (max.)	—	—	—	—	—	—
32	**R.F. TETRODE**	R.F. Amplifier and Biased Detector	F	2·0	0·06	135 180	1·7 1·7	−3 −3	67·5 67·5	0·4 0·4	640 650	— —	0·95 1·2

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser input to filter = 32 μF maximum. Plate supply impedance = 100 Ω minimum.	30	NC	H	A	NC	A	—	H	K	—	—	—	**25Z4G**
—	—	—	★ *For data and notes refer type* 25Z6.	17	H	A''	K''	K'	A'	H	—	—	—	—	—	**25Z5**
—	—	—	In half-wave service the two units may be used seperately or in parallel. Condenser input to filter = 16 μF. Plate supply impedance per plate = 100 Ω min.	30	S NC	H H	A'' A''	K'' K''	A' A'	— —	H H	K' K'	— —	— —	— —	**25Z6** **25Z6G** **25Z6GT** **25Z6GT/G**
—	—	8·1	Grid bias referred to centre of A.C. operated filament.	8	F	A	G_1	F	—	—	—	—	—	—	—	**26**
—	—	3·3	As biased detector zero signal plate current adjusted to 0·2 mA. Plate volts = 250 volts. Grid Bias — 30 volts.	15	H	A	G_1	K	H	—	—	—	—	—	—	**27**
★	★	6·0	★ *For data and notes refer type* 1H4G.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**30**
2400	1·9	0·3	Total Harmonic Distortion 10%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**30A5**
—	—	—	*Do not use as tie point. ★ *For data and notes refer type* 6AL3,	32	IC *	IC *	IC *	H	H	IC *	IC *	IC *	A	K	—	**30AE3**
7000 5700	0·185 0·375	5·7	* Cathode Bias Resistor 2815 Ω. † Cathode Bias Resistor 2440 Ω. Full or partial self-biasing is recommended and is essential if a grid resistor is used. Maximum grid resistor 1·0 meg.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**31**
—	—	—	Condenser input to filter 50μF. max. Plate supply impedance 210 Ω minimum.	28	H	A	—	IC	—	IC	K	H	—	—	—	**31A3**
— —	— —	0·015	As biased detector zero signal plate current adjusted to 0·2 mA. Plate volts 180 volts. Grid Bias — 6 volts.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**32**

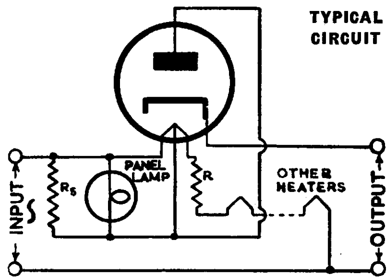
TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
32L7GT	**RECTIFIER BEAM POWER OUTPUT TETRODE**	Rectifier and Class "A" Power Amplifier	H	32·5	0·3	90	27	−7	90	2·0	4800	—	0·017
33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·26	135 180	14·5 22·0	−13·5 −18	135 180	3·0 5·0	1450 1700	— —	0·05 0·055
34	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·06	135 180	2·8 2·8	−3 −3	67·5 67·5	1·0 1·0	600 620	— —	0·6 1·0
35	**REMOTE CUT-OFF R.F. TETRODE**	R.F. Amplifier	H	2·5	1·75	250	6·5	−3	90	2·5	1050	—	0·4
35A5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	200	Zero Signal 41·0 Max. Signal 44·0	−8	110	Zero Signal 2·0 Max. Signal 7·0	5900	—	0·04
35B5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	110	Zero Signal 40·0 Max. Signal 41·0	−7·5	110	Zero Signal 3·0 Max. Signal 7·0	5800	—	0·013
35C5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	★	★	★	★	★	★	—	★
35L6G **35L6GT** **35L6GT/G**	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	35·0	0·15	200	Zero Signal 41·0 Max. Signal 44·0	−8	110	Zero Signal 2·0 Max. Signal 7·0	5900	—	0·04

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
2600	1·0	—	Total Harmonic Distortion 9%. Rectifier Unit (half-wave) Condenser Input to filter Max. R.M.S. 125 volts. D.C. Output 60·0 mA max.	30	K^r	H	A^t	$G_2{}^t$	$G_1{}^t$	A^r	H	K^t	—	—	—	**32L7GT**
7000 6000	0·7 1·4	1·0	Total Harmonic Distortion 7% in each case.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**33**
— —	— —	0·015	Mutual Conductance 15 μmhos at − 22·5 volts grid bias.	8	F+	A	G_2	F−	—	—	—	—	—	G_1	—	**34**
—	—	0·007	Mutual Conductance 15 μmhos at − 40 volts grid bias.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**35**
4500	3·3	—	Total Harmonic Distortion 10%	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**35A5**
2500	1·5	0·4	Total Harmonic Distortion 10%.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**35B5**
★	★	0·57	★ *For data and notes refer type* 35B5.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**35C5**
4500	3·3	— 0·8 0·8	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**35L6G** **35L6GT** **35L6GT/G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
35W4	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier (without Panel Lamp)		35·0	0·15	R.M.S. 117	D.C. Output 100 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)	H	32·0	See Notes	R.M.S. 117	See Notes	—	—	—	—	—	—
35Y4	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier (without Panel Lamp)		35·0	0·15	R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)	H	32·0	See Notes	R.M.S. 235	D.C. Output 60 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Heater circuit connection pins 3 and 4. No connection to pin 6. Condenser input to filter 40 μF. Plate supply impedance = 15 Ω minimum.													
—	—	—	TYPICAL CIRCUIT  Heater circuit connection pins 3 and 4. Panel lamp connection pins 4 and 6 (5·5 volts with lamp alight). Heater current between pins 3 and 6 = 0·15 A. For output current = 90 mA, R_s = 100 Ω. 80 mA, R_s = 150 Ω. 70 mA, R_s = 300 Ω. 60 mA, R_s = —. Condenser input to filter 40 μF. Plate supply impedance = 15 Ω minimum.	21	NC	NC	H	H	A	H_t	K	—	—	—	—	**35W4**
—	—	—	Heater circuit connection pins 1 and 8. No connection to pin 4. Condenser input to filter 40 μF. Plate supply impedance = 100 Ω minimum.													
—	—	—	For typical circuit refer type 35W4. Heater circuit connection pins 1 and 8. Panel lamp connection pins 1 and 4 (5·5 volts with lamp alight). Heater current between pins 4 and 8 = 0·15 A. R_s not required for 60 mA Output. Condenser input to filter 40 μF. Plate supply impedance = 100 Ω minimum. For 117 V. R.M.S. input, with and without panel lamp, operational characteristics of type 35Y4 are identical to those of type 35W4.	29	H	A	NC	H_t	NC	NC	K	H	—	—	S	**35Y4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
35Z3	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	35·0	0·15	★	★	—	—	—	—	—	—
35Z4GT	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	35·0	0·15	Max. R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
35Z5G 35Z5GT 35Z5GT/G	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier (without Panel Lamp)		35·0	0·15	R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 volts at 0·15 A)	H	32·0	See Notes	R.M.S. 235	D.C. Output 60 Max.	—	—	—	—	—	—
36	**R.F. TETRODE**	R.F. Amplifier and Biased Detector	H	6·3	0·3	250	3·2	−3	90	1·7	1080	—	0·55
37	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	H	6·3	0·3	250	7·5	−18	—	—	1100	9·2	8400 Ohms
38	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·3	250	22·0	−25	250	3·8	1200	—	0·1
38A3	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	38	0·1	R.M.S. 250 (max.)	110 (max.)	—	—	—	—	—	—
39 / 44	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	5·8	−3	90	1·4	1050	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	—	★ *For data and notes refer type* 35Z4GT.	29	H	A	NC	NC	NC	NC	K	H	—	—	S	**35Z3**
—	—	—	With less than 40 µF condenser input to filter, plate supply impedance = 100 Ω min. Greater supply impedances required for larger input capacities.	30	NC	H	NC	—	A	—	H	K	—	—	—	**35Z4GT**
—	—	—	Heater circuit connections pins 2 and 7. No connection to pin 3. Condenser input to filter 40 µF. Plate supply impedance = 100 Ω minimum.													
—	—	—	For typical circuit refer type 35W4. Heater circuit connection pins 2 and 7. Panel lamp connection pins 2 and 3 (5·5 volts when lamp alight). Heater current between pins 3 and 7 = 0·15 A. R_s not required for 60 mA output. Condenser input to filter 40 µF. Plate supply impedance = 100 Ω minimum. For 117 V. R.M.S. input, with and without panel lamp, operational characteristics of type 35Z5G, etc., are identical to those of type 35W4.	30	NC	H	H_t	—	A	—	H	K	—	—	—	**35Z5G** **35Z5GT** **35Z5GT/G**
—	—	0·007	As biased detector zero signal plate current adjusted to 0·1 mA. Plate volts 250 V. Grid bias − 8 V.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**36**
—	—	2·0	As biased detector zero signal plate current adjusted to 0·2 mA. Plate volts 250 V. Grid bias − 28 V.	15	H	A	G_1	K	H	—	—	—	—	—	—	**37**
10,000	2·5	0·3	Total Harmonic Distortion 8%.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**38**
—	—	—	Maximum filter input capacitor 100 µF. Peak Inverse Plate Voltage 700 max.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**38A3**
—	—	0·007	Mutual conductance = 2 µmhos at − 42·5 volts grid bias.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**39 / 44**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
40	**TRIODE**	A.F. Amplifier	F	5·0	0·25	180 Supply	0·2	−3	—	—	200	30	0·15
40A1	**GAS FILLED CURRENT STABILISER**	Horizontal Deflection Stabilizer	F	20 60	70 95	—	—	—	—	—	—	—	—
41	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	★	★	★	★	★	★	—	★
42	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier Class "AB_2" Power Amplifier	H	6·3	0·7	★	★	★	★	★	★	—	★
43	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	25·0	0·3	★	★	★	★	★	★	—	★
45	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	2·5	1·5	275	36·0	−56	—	—	2050	3·5	1700 Ohms
		Class "AB_2" Power Amplifier				275	Zero Signal 28·0 Max. Signal 138·0	−68	—	—	—	—	—
		Class "AB_2" Power Amplifier				275	Zero Signal 36·0 Max. Signal 90·0	See Note	—	—	—	—	—
45A5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	45	0·1	170 110 100	53 32 29	−10·4 −6·4 −5·7	170 110 100	10·0 6·0 5·5	9500 8500 8000	— — —	0·02 0·018 0·018

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	8·0	Plate load resistor 0·25 meg.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**40**
—	—	—	VOLTAGE INPUT / CURRENT OUTPUT 20 — 74 mA. 40 — 84 mA. 60 — 90 mA.	30	NC	R	—	NC	—	—	R	NC	—	—	—	**40A1**
★	★	—	★ *For data and notes refer type* 6K6G.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**41**
★	★	—	★ *For data and notes refer type* 6F6G.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**42**
★	★	—	★ *For data and notes refer type* 25A6.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**43**
4600	2·0		Grid bias referred to centre of A.C.-operated filament. Resistance coupling (max. grid resistance 1·0 meg.) only permissible with cathode bias. Cathode bias not essential but recommended in all other cases.													
3200 Plate to Plate	18·0	7·0	Fixed bias condition. Grid bias referred to centre of A.C.-operated filament. Values are for two valves. Total Harmonic Distortion 5%. Grid to grid input power 656 mW.	8	F	A	G_1	F	—	—	—	—	—	—	—	**45**
5060 Plate to Plate	12·0		Cathode bias resistor 775 Ω. Values are for two valves. Total Harmonic Distortion 5%. Grid to grid input power 460 mW.													
3000 3000 3000	4·25 1·7 1·35	1·0	Total Harmonic Distortion in each case 10%.	28	H	A	IC	NC	G_2	G_1	K G_3	H	—	—	—	**45A5**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
45B5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	45	0·1	170 100	70 43	−12·5 −6·7	170 100	5·0 3·0	10000 9000	— —	0·023 0·023
		Class "AB" Power Amplifier				170	Zero Signal 2 × 56·5 Max. Signal 2 × 57·5	See Note	170	Zero Signal 2 × 3·0 Max. Signal 2 × 20·5	—	—	—
45Z3	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	45·0	0·075	Max. R.M.S. 117	D.C. Output 65 Max.	—	—	—	—	—	—
45Z5GT	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier (without Panel Lamp)	H	45·0	0·15	R.M.S. 235	D.C. Output 100 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)		42·0	See Notes	R.M.S. 235	D.C. Output 60 Max.	—	—	—	—	—	—
46	**POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	2·5	1·75	250	22·0	(G_1) −33	—	—	2350	5·6	2380 Ohms
		Class "B" Power Amplifier				400	Zero Signal 6·0	(G_{1+2}) 0	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
2400 2400	5·6 1·9	0·6	Total harmonic distortion 10% in each case.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**45B5**
plate to plate 3500	13·0		Cathode Resistor 120 Ω. Total harmonic distortion 4·5%. Max. R.M.S. Input Voltage = 13·1.													
—	—	—	Condenser input to filter. Plate supply impedance = 15 ohms minimum.	21	H	A	IC	K	NC	A	H	—	—	—	—	**45Z3**
—	—	—	Heater circuit connections pins 2 and 7. No connection to pin 3. With less than 40 μF condenser input to filter, minimum plate supply impedance = 100 Ω minimum. Greater supply impedances required for larger input capacities.	30	NC	H	H^t	—	A	—	H	K	—	—	—	**45Z5GT**
—	—	—	For typical circuit refer type 35W4. Heater circuit connection pins 2 and 7. Panel lamp connection pins 2 and 3 (5·5 volts when lamp alight). Heater current between pins 3 and 7 = 0·15 A. R_s not required for 60 mA output. With less than 40 μF condenser input to filter, minimum plate supply impedance = 100 Ω minimum. Greater supply impedances required for larger input capacities. For 117 V. R.M.S. input, with and without panel lamp, operational characteristics of type 45Z5GT are identical to those of type 35Z5GT.													
6400	1·25	—	Grid No. 2 tied to plate at socket. Grid bias referred to centre of A.C.-operated filament.	15	F	A	G_1	G_2	F	—	—	—	—	—	—	**46**
5800 Plate to Plate	20		Values are for two valves. Grids Nos. 1 and 2 tied at socket. Grid and plate returns connected to centre-tap of filament winding or centre-tap of 20 Ω resistor across winding. Peak A.F. Grid to Grid volts = 116 at 650 mW.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
47 47M	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F H	2·5	1·75	250	31	−16·5	250	6·0	2500	—	0·06
48	**POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	30·0	0·4	125	56	−20	100	9·5	3900	—	—
49	**POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	2.0	0.12	135	6·0	(G_1) −20	—	—	1125	4·7	4175 Ohms
		Class "B" Power Amplifier				180	Zero Signal 2·0 per Tube	(G_{1+2}) 0	—	—	—	—	—
50	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	7·5	1·25	450	55	−84	—	—	2100	3·8	1800 Ohms
50A5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	50	0·15	200	Zero Signal 50 Max. Signal 55	−8	100	Zero Signal 1·5 Max. Signal 6·0	8250	—	0·035
50B5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	50	0·15	110	Zero Signal 49 Max. Signal 50	−7·5	110	Zero Signal 4·0 Max. Signal 8·5	7500	—	0·014
50C5	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	50	0·15	110	Zero Signal 49 Max. Signal 50	−7·5	110	Zero Signal 4·0 Max. Signal 8·5	7500	—	0·01
50C6G	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	50	0·15	200	Zero Signal 61 Max. Signal 66	−14	135	Zero Signal 2·2 Max. Signal 9·0	7100	—	18,300 Ohms
50L6G 50L6GT	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	50	0·15	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
7000	2·7	1·2	Total Harmonic Distortion 6%. Grid Bias referred to centre of A.C.-operated filament. 47M { Cathode internally tied to centre of heater.	15	F H	A A	G_1 G_1	G_2 G_2	F H	— —	— —	— —	— —	— —	— —	**47** **47M**
1500	2·5	—	Total Harmonic Distortion 9%. Plate Resistance is subject to large variations.	17	H	A	G_2	G_1	K	H	—	—	—	—	—	**48**
11,000	0·17	—	Grid No. 2 tied to plate at socket.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	**49**
12,000 Plate to Plate	3·5		Unless otherwise stated values are for two valves. Grids Nos. 1 and 2 tied at socket.													
4350	4·6	7·1	Grid Bias referred to centre of A.C. operated filament. Resistance coupling (maximum resistance 10,000 Ω) only permissible with cathode bias. Cathode bias not essential, but recommended in all other cases.	8	F	A	G_1	F	—	—	—	—	—	—	—	**50**
3000	4·3	—	Total Harmonic Distortion 10%.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	S	**50A5**
2500	1·9	0·5	Total Harmonic Distortion 9%.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**50B5**
2500	1·9	0·64	Total Harmonic Distortion 9%.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**50C5**
2600	6·0	—	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**50C6G**
★	★	—	★ *For data and notes refer type* 25L6GT.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**50L6G** **50L6GT**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Volt-age Volts	Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
50X6	**FULL-WAVE VACUUM RECTIFIER**	Half* Wave Rectifier	H	50	0·15	R.M.S. per Plate 235	D.C. Output per Plate 75	—	—	—	—	—	—
		Full-wave Voltage Doubler				R.M.S. per Plate 117	D.C. Output 75	—	—	—	—	—	—
50Y6GT	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50	0·15	★	★	—	—	—	—	—	—
50Y7GT	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier (without Panel Lamp)	H	50·0	0·15	R.M.S. 235	D.C. Output 150 Max.	—	—	—	—	—	—
		Half-wave Rectifier (with Panel Lamp of 6 to 8 V. at 0·15 A)		46·0	See Notes	R.M.S. 235 per Plate	D.C. Output per Plate 65 Max.	—	—	—	—	—	—
51	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	2·5	1·75	★	★	★	★	★	★	—	★
53	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	H	2·5	2·0	★	★	★	—	—	—	—	—
55	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	2·5	1·0	★	★	★	—	—	★	★	★
56	**TRIODE**	A.F. Amplifier	H	2·5	1·0	★	★	★	—	—	★	★	★
57	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	2·5	1·0	★	★	★	★	★	★	—	★

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Filter input capacitor 16 μF. Minimum total effective plate supply impedance per plate = 100 Ω. * In half-wave rectifier service, the two units may be used separately or in parallel.	29	H	K''	A''	NC	NC	A'	K'	H	—	—	S	**50X6**
—	—	—	Filter input capacitor 16 μF. Minimum total effective plate supply impedance 15 Ω.													
—	—	—	★ *For data and notes refer type* 25Z6GT.	30	NC	H	A''	K''	A'	—	H	K'	—	—	—	**50Y6GT**
—	—	—	Heater circuit connection pins 2 and 7. No connection to pin 6. Condenser input to filter 16 μF. Plate supply impedance per plate = 100 Ω min. Values are for two units in parallel.	30	NC	H	A''	K''	A'	H_t	H	K'	—	—	—	**50Y7GT**
—	—	—	For typical heater circuit refer type 35W4. Heater circuit connection pins 2 and 7. Panel lamp connection pins 6 and 7 (5·5 volts when lamp alight). Heater current between pins 2 and 6 = 0·15 A. Panel lamp shunting resistor = 250 Ω. Condenser input to filter 16 μF. Plate supply impedance per plate = 100 Ω min.													
—	—	—	★ *For data and notes refer type* 35.	15	H	A	G_2	K	H	—	—	—	—	G_1	—	**51**
★	★	—	★ *For data and notes refer type* 6N7.	20	H	A''	G_1''	K	G_1'	A'	H	—	—	—	—	**53**
★	★	1·5	★ *For data and notes refer type* 85.	17	H	A	D_2	D_1	K	H	—	—	—	G_1	—	**55**
★	★	3·2	★ *For data and notes refer type* 6P5G. *For replacement consider also type* 76.	15	H	A	G_1	K	H	—	—	—	—	—	—	**56**
—	—	0·007	★ *For data and notes refer type* 6J7. *For replacement consider also type* 6C6.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**57**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
58	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	2·5	1·0	★	★	★	★	★	★	—	★
58CG	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90	0·001	—	—	—	—	—	—
58CV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90	0·003 Max.	—	—	—	—	—	—
59	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	2·5	2·0	250	35·0	−18	250	9·0	2500	—	0·04
70B1	**VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	70	5·0 to 15·0	—	—	—	—	—	—
70L7GT	**RECTIFIER—BEAM POWER OUTPUT TETRODE**	Half-wave Rectifier	H	70	0·15	Max. R.M.S. 117	D.C. Output 70 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				110	Zero Signal 40 Max. Signal 43	−7·5	110	Zero Signal 3·0 Max. Signal 6·0	7500	—	0·015
71A	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	5·0	0·25	180	20·0	−40·5	—	—	1700	3	1750 Ohms
75	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
76	**TRIODE**	A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
77	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	250	2·3	−3	100	0·5	1250	—	> 1·0
78	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·007	★ *For data and notes refer type* 6U7G. *For replacement consider also type* 6D6.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**58**
—	—	—	For red and near infra-red. Sensitivity = 85 μA/Lumen at 2700° K. Dark current at 90 V. = 0·1 μA. Caesium on oxidised silver cathode.	53	A	K	—	—	—	—	—	—	—	—	—	**58CG**
—	—	—	For red and near infra-red. Sensitivity = 15 μA/Lumen at 2700° K. Dark current at 100 V. = 0·05 μA. Caesium on oxidised silver cathode.	53	A	K	—	—	—	—	—	—	—	—	—	**58CV**
6000	3·0	—	Total Harmonic Distortion 7%.	20	H	A	G_2	G_1	G_3	K	H	—	—	—	—	**59**
—	—	—	Starting voltage = 100 volts D.C.	31	A	K	IC	K	IC	IC	IC	K	—	—	—	**70B1**
—	—	—	Condenser input to filter = 90 μF max. Plate supply impedance = 15 ohms minimum.	30	K^r	H	A^t	$G_2{}^t$	$G_1{}^t$	K^t	H	A^r	—	—	—	**70L7GT**
2000	1·8	—	Total Harmonic Distortion 10%.													
4800	0·79	7·5		8	F+	A	G_1	F−	—	—	—	—	—	—	—	**71A**
—	—	1·7	★ *For data and notes refer type* 6SQ7GT. *For replacement consider also type* 6B6G.	17	H	A	D_2	D_1	K	H	—	—	—	G_1	—	**75**
—	—	2·8	★ *For data and notes refer type* 6P5G.	15	H	A	G_1	K	H	—	—	—	—	—	—	**76**
—	—	0·007	Cathode current cut-off at − 7·5 volts grid bias.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**77**
—	—	0·007	★ *For data and notes refer type* 6K7.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**78**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
79	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	H	6·3	0·6	250	Zero Signal 5·3 per Plate	0	—	—	—	—	—
80	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·0	★	★	—	—	—	—	—	—
80S	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	★	★	—	—	—	—	—	—
81	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	7·5	1·25	Max. R.M.S. 700	D.C. Output 85·0 Max.	—	—	—	—	—	—
82	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	F	2·5	3·0	Max. R.M.S. 2 X 450	D.C. Output 115·0	—	—	—	—	—	—
83	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	F	5·0	3·0	Max. R.M.S. 2 x 450	D.C. Output 225·0 Max.	—	—	—	—	—	—
83V	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	★	★	—	—	—	—	—	—
84 / 6Z4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·5	Max. R.M.S. 2 x 325	D.C. Output 60·0 Max.	—	—	—	—	—	—
85	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	250	8·0	−20	—	—	1100	8·3	7500 Ohms
85A1	**VOLTAGE REFERENCE**	Voltage Reference	COLD	—	—	★	★	—	—	—	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
14,000 Plate to Plate	8·0	—	Average power input = 380 mW applied between grids. As phase inverter (300 volts supply). Following grid leak 1·0 meg. Plate resistor 0·5 meg. Cathode resistor 3600 Ω. Gain = 46.	17	H	A''	G_1''	K	A'	H	—	—	—	G_1'	—	**79**
—	—	—	★ *For data and notes refer type* 5Y3G.	8	F	A''	A'	F	—	—	—	—	—	—	—	**80**
—	—	—	★ *For data and notes refer type* 5Z4G. *For replacement consider also types* 5Y3GT *and* 80.	8	K H	A'	A''	H	—	—	—	—	—	—	—	**80S**
—	—	—		8	F	A	NC	F	—	—	—	—	—	—	—	**81**
—	—	—	Tube voltage drop 15 volts. With less than 40 µF condenser input to filter, min. supply impedance per plate = 50 Ω. Greater supply impedances are required for larger input capacities.	8	F	A''	A'	F	—	—	—	—	—	—	—	**82**
—	—	—	Tube voltage drop 15 volts. With less than 40 µF condenser input to filter, min. supply impedance per plate = 50 Ω. Greater supply impedances are required for larger input capacities.	8	F	A''	A'	F	—	—	—	—	—	—	—	**83**
—	—	—	★ *For data and notes refer type* 5V4G.	8	H	A''	A'	H K	—	—	—	—	—	—	—	**83V**
—	—	—	With less than 40 µF condenser input to filter, minimum supply impedance per plate = 65 Ω. Greater supply impedances are required for larger input capacities.	15	H	A''	A'	K	H	—	—	—	—	—	—	**84 / 6Z4**
20,000	0·35	1·5	As R.C. amplifier (300 V. supply). Following grid leak 1·0 meg. Plate resistor 0·25 meg. Cathode resistor 23,600 Ω. Gain = 5·8.	17	H	A	D_2	D_1	K	H	—	—	—	G_1	—	**85**
—	—	—	★ *For data and notes refer type* OE3.	29	NC	A	NC	K	NC	NC	NC	K	—	—	—	**85A1**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
85A2	**VOLTAGE REFERENCE**	Voltage Reference	COLD	—	—	★	★	—	—	—	—	—	—
89	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	250	32·0	−25	250	5·5	1800	—	0·07
90AV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100	0·005	—	—	—	—	—	—
90CG	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90	0·002	—	—	—	—	—	—
90CV	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	50	0·005	—	—	—	—	—	—
99	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	3·0	0·06	90	2·5	−4·5	—	—	425	6·6	0·0155
100E1	**NEON-FILLED VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	100	50·0 to 200·0	—	—	—	—	—	—
10531	**VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	105	5·0 to 15·0	—	—	—	—	—	—
112A	**DETECTOR AMPLIFIER TRIODE**	Class "A" Power Amplifier and Biased Detector	F	5·0	0·25	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* OG3.	21	A	K	IC	K	A	IC	K	—	—	—	—	**85A2**
6750	3·4	—	Total Harmonic Distortion 9%.	17	H	A	G_2	G_3	K	H	—	—	—	G_1	—	**89**
—	—	—	For daylight and bluish light Sensitivity = 45 µA/Lumem at 2700°K. Dark current at 100 volts = 0·05 µA. Caesium—Antimony Cathode. External connections to cathode should be made to pins 1 and 7 connected together.	21	K	NC	A	A	A	NC	K	—	—	—	—	**90AV**
—	—	—	For incandescent light and near infra-red. Sensitivity = 125 µA/Lumen at 2700°K. Dark current at 90 V. = 0·1 µA. Caesium on oxidised silver cathode. Gas amplification factor = 10 maximum.	21	NC	K	NC	A	NC	K	NC	—	—	—	—	**90CG**
—	—	—	For incandescent light and near infra-red. Sensitivity = 20 µA/Lumen at 2700°K. Dark current at 100 volts = 0·05 µA. Caesium on oxidised silver cathode.	21	NC	K	NC	A	NC	K	NC	—	—	—	—	**90CV**
—	—	3·3	As biased detector adjust zero signal plate current to 0·2 mA. Plate volts = 90 volts. Grid bias − 10·5 volts.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**99**
—	—	—	Quiescent current = 125 mA. Starting voltage = 140 volts D.C. A.C. resistance = 30 Ω max.	10	A	NC	K	NC	—	—	—	—	—	—	—	**100E1**
—	—	—														**105B1**
★	★	8·5	★ *For data and notes refer type* 12A.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**112A**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
117L7GT / 117M7GT	**RECTIFIER BEAM POWER OUTPUT TETRODE**	Half-wave Rectifier and Class "A" Power Amplifier	H	117	0·09	★	★	★	★	★	★	—	★
117N7GT	**RECTIFIER BEAM POWER OUTPUT TETRODE**	Half-wave Rectifier	H	117	0·09	Max. R.M.S. 117	D.C. Output 75·0 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				100	51·0	−6	100	5·0	7000	—	0·016
117P7GT	**RECTIFIER BEAM POWER OUTPUT TETRODE**	Half-wave Rectifier	H	117	0·09	Max. R.M.S. 117	D.C. Output 75 Max.	—	—	—	—	—	—
		Class "A" Power Amplifier				105	Zero Signal 43 Max. Signal 43	−5·2	105	Zero Signal 4·0 Max. Signal 5·5	5300	—	0·017
117Z3	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	117	0·04	R.M.S. 117	D.C. Output 90 Max.	—	—	—	—	—	—
117Z4GT	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	117	0·04	R.M.S. 117	D.C. Output 90 Max.	—	—	—	—	—	—
117Z6G 117Z6GT 117Z6GT/G	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	117	0·075	R.M.S. 235	D.C. Output per Plate 60 Max.	—	—	—	—	—	—
150A1	**VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	150	1·0 to 8·0	—	—	—	—	—	—
150B1	**VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	150	5·0 to 15·0	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No,
★	★	—	★ *For data and notes refer type* 117P7GT.	30	K^r	H	A^t	$G_1{}^t$	$G_2{}^t$	A^r	H	K^t	—	—	—	**117L7GT / 117M7GT**
—	—	—	With less than 40 µF condenser input to filter, minimum plate supply impedance = 15 Ω. Greater supply impedances are required for larger input capacities.	30	NC	H	A^t	$G_1{}^t$	$G_2{}^t$	K^t	A^r H	K^r	—	—	—	**117N7GT**
3000	1·2	—	Total Harmonic Distortion 6%.													
—	—	—	Condenser input to filter = 40 µF maximum. Plate supply impedance = 15 Ω minimum.	30	NC	H	A^t	$G_1{}^t$	$G_2{}^t$	K^t	H A^r	K^r	—	—	—	**117P7GT**
4000	0·85	—	Total Harmonic Distortion 5%.													
—	—	—	Condenser input to filter = 40 µF maximum. Plate supply impedance = 15 Ω minimum.	21	IC	NC	H	H	A	K	NC	—	—	—	—	**117Z3**
—	—	—	With less than 40 µF condenser input to filter, minimum plate supply impedance = 30 Ω. Greater supply impedances are required for larger input capacities.	30	NC	H	NC	—	A	—	H	K	—	—	—	**117Z4GT**
—	—	—	In half-wave service the two units may be used separately or in parallel. Condenser input to filter 40 µF. Plate supply impedance = 100 Ω minimum per plate.	30	NC	H	A''	K''	A'	—	H	K'	—	—	—	**117Z6G** **117Z6GT** **117Z6GT/G**
—	—	—	Quiescent current = 4 mA. Starting voltage = 205 V. D.C. A.C. resistance = 1140 Ω.	26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	**150A1**
—	—	—														**150B1**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
150C1	**VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	150	5·0 to 40·0	—	—	—	—	—	—
161	**CURRENT REGULATOR**	Current Regulator	F	100 to 200	0·16	—	—	—	—	—	—	—	—
302	**CURRENT REGULATOR**	Current Regulator	F	112 to 195	0·3	—	—	—	—	—	—	—	—
329	**CURRENT REGULATOR**	Current Regulator	F	10 to 30	1·15	—	—	—	—	—	—	—	—
373	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	1·0	Max. R.M.S. 220	D.C. Output 40 Max.	—	—	—	—	—	—
505	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	1·0	Max. R.M.S. 400	D.C. Output 60 Max.	—	—	—	—	—	—
506	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	1·0	Max. R.M.S. 2 x 300	D.C. Output 75 Max.	—	—	—	—	—	—
807 807W	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	0·9	250	72	—14	250	5·0	6000	—	0·0225
		Class "AB_1" Power Amplifier				400	Zero Signal 2 × 28 Max. Signal 2 × 71·5	—30	300	Zero Signal 2×1·0 Max. Signal 2 × 8·0	—	—	—
868	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100 Max.	0·002 Max.	—	—	—	—	—	—
874	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	90	10 to 50	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Quiescent current = 20 mA max. Starting voltage = 205 V. D.C. A.C. resistance = 200 Ω.	26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	**150C1**
—	—	—		40	R	R	—	—	—	—	—	—	—	—	—	**161**
—	—	—		40	R	R	—	—	—	—	—	—	—	—	—	**302**
—	—	—		4	NC	R	R	—	—	—	—	—	—	—	—	**329**
—	—	—		4	A	F	F	—	—	—	—	—	—	—	—	**373**
—	—	—		4	A	F	F	—	—	—	—	—	—	—	—	**505**
—	—	—	Condenser input to filter = 16 μF maximum.	10	A''	F	A'	F	—	—	—	—	—	—	—	**506**
2500	6·5		Total Harmonic Distortion 10%.	15	H	G_2	G_1	K G_3	H	—	—	—	—	A	—	**807** **807W**
6800 Plate to Plate	36·0		Peak Signal Voltage Grid to Grid = 60 volts. Type 807W has low loss phenolic base and different bulb to 807.													
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 90 μA/Lumen with O. cycles/sec. at 2870° K and 1·0 meg. series resistor. Dark current at 90 V. = 0·1 μA. Gas amplification factor = 8 maximum.	8	NC	A	NC	K	—	—	—	—	—	—	—	**868**
—	—	—	Starting voltage = 115 V. D.C.	8	K	J	A	J	—	—	—	—	—	—	—	**874**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
876	**CURRENT REGULATOR**	Current Regulator	F	40 to 60	1·7	—	—	—	—	—	—	—	—
878	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	2·5	5·0	Max. R.M.S. 7100	Peak 20 Average 5	—	—	—	—	—	—
879	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	2·5	1·75	★	★	—	—	—	—	—	—
884	**GAS TRIODE**	Relaxation Oscillator	H	6·3	0·6	Max. Peak 300	Peak 300 Max. Average 2	—	—	—	—	—	—
885	**GAS TRIODE**	Relaxation Oscillator	H	2·5	1·5	★	★	—	—	—	—	—	—
886	**CURRENT REGULATOR**	Current Regulator	F	40 to 60	2·05	—	—	—	—	—	—	—	—
919	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Max. Peak 500	Peak 0·03 Max. Average 0·01 Max.	—	—	—	—	—	—
920	**GAS-FILLED PHOTO-ELECTRIC CELL**	Twin P.E. Cell	P E	—	—	Max. Peak 90	Peak 0·006 Max. Average 0·002 Max.	—	—	—	—	—	—
926	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Max. Peak 500	Peak 0·015 Max. Average 0·005 Max.	—	—	—	—	—	—
927	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	P E	—	—	Max. Peak 90	Peak 0·006 Max. Average 0·002 Max.	—	—	—	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Ambient temperature 150° F.	42	R	R	—	—	—	—	—	—	—	—	—	**876**
—	—	—	Filament voltage applied between pins 1 and 4. Peak inverse volts = 20,000 For use with cathode ray tubes.	8	F+	F+	F−	F−	—	—	—	—	—	A	—	**878**
—	—	—	★ *For data and notes refer type* 2X2A.	8	H	NC	NC	H K	—	—	—	—	—	A	—	**879**
—	—	6·0	Grid resistor not less than 1000 Ω per maximum instantaneous unit voltage applied to the grid. Peak grid current 1·0 mA max.	30	NC	H	A	—	G_1	—	H	K	—	—	—	**884**
—	—	6·0	★ *For data and notes refer type* 884.	15	H	A	G_1	K	H	—	—	—	—	—	—	**885**
—	—	—	Ambient temperature 150° F.	42	R	R	—	—	—	—	—	—	—	—	—	**886**
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 20 μA/Lumen at 2870° K with 1·0 meg. series resistor. Dark current at 250 volts = 0·005 μA.	8	NC	A	NC	NC	—	—	—	—	—	K	—	**919**
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 100 μA/Lumen at O cycles/sec. at 2870° K with 1·0 meg series resistor. Dark current at 90 volts = 0·1 μA. Gas amplification factor = 9. Values are for each unit.	8	K''	A''	A'	K'	—	—	—	—	—	—	—	**920**
—	—	—	For 4200 ± 1000° A (Ultra Violet-Blue). Sensitivity = 6·5 μA/Lumen at 2870° K with 1·0 meg. series resistor. Dark current at 250 volts = 0·005 μA.	34	K	A	—	—	—	—	—	—	—	—	—	**926**
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 125 μA/Lumen with O cycles/sec. at 2870° K with 1·0 meg. series resistor. Dark current at 90 volts = 0·1 μA. Gas amplification factor = 10 maximum.	41	NC	A	K	—	—	—	—	—	—	—	—	**927**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
929	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	Peak 250	Peak 0·02 Max. Average 0·005 Max.	—	—	—	—	—	—
930	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	Peak 90	Peak 0·01 Max. Average 0·003 Max.	—	—	—	—	—	—
931A	**MULTIPLIER PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	Peak 1250	Peak 10·0 Max. Average 1·0 Max.	—	—	—	—	—	—
954	**SHARP CUT-OFF R.F. PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	★	★	★	★	★	★	—	★
955	**DETECTOR OSCILLATOR AMPLIFIER TRIODE**	R.F. and A.F. Amplifier	H	6·3	0·15	180	4·5	−5	—	—	2000	25	0·0125
956	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	★	★	★	★	★	★	—	★
957	**DETECTOR OSCILLATOR AMPLIFIER TRIODE**	R.F. Amplifier	F	1·25	0·05	135	2·0	−5	—	—	650	13·5	0·0208
958A	**OSCILLATOR AMPLIFIER TRIODE**	R.F. Amplifier	F	1·25	0·1	135	3·0	−7·5	—	—	1200	12	0·01
959	**DETECTOR AMPLIFIER R.F. PENTODE**	R.F. Amplifier	F	1·25	0·05	135	1·7	−3	67·5	0·4	600	—	0·8
991	**VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	48 to 67	Max. 2·0 Min. 0·4	—	—	—	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	For 4000 ± 500° A (Ultra Violet-Blue). Sensitivity = 45 μA/Lumen at 2870° K with 1·0 meg. series resistor. Dark current at 250 volts = 0·0125 μA.	30	NC	NC	—	A	—	NC	—	K	—	—	—	**929**
—	—	—	For 8000 ± 1000° A (Red-Infra Red). Sensitivity = 135 μA/Lumen at O cycles/sec. at 2870° K with 1·0 meg. series resistor. Dark current at 90 V. = 0·1 μA. Gas amplification factor = 10 maximum.	30	NC	NC	—	A	—	NC	—	K	—	—	—	**930**
—	—	—	d for dynode. For 4000 ± 500° A (Ultra Violet-Blue). With 100 volts per dynode stage and 100 volts between dynode No. 9 and anode :— Sensitivity = 10 A/Lumen at 2870° K with 0·1 meg. series resistor. Dark current = 0·25 μA. Current amplification = 10^6.	44	1 d_1	2 d_2	3 d_3	4 d_4	5 d_5	6 d_6	7 d_7	8 d_8	9 d_9	10 A	11 K	**931A**
—	—	0·007	★ *For data and notes refer type* 9001.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**954**
20,000	0·135	1·4	Especially for wavelengths between 0·5 and 5·0 metres. As R.C. amplifier (250 volts supply). Plate resistor 0·25 meg. Grid bias − 3·5 volts. Plate current 0·42 mA. Gain = 20.	13	H	A	G_1	H	K	—	—	—	—	—	—	**955**
—	—	0·007	★ *For data and notes refer type* 9003.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**956**
—	—	1·2		13	F+	A	G_1	F−	F−	—	—	—	—	—	—	**957**
—	—	2·6	Capable of producing a useful power output at frequencies up to 350 Mc/s approx.	13	F+	A	G_1	F−	F−	—	—	—	—	—	—	**958A**
—	—	0·015		22	F+	G_2	G_3	F−	F−	G_1	A	—	—	—	—	**959**
—	—	—	Starting voltage 87 V. D.C. Additional circuit resistance may be required to limit the current to 2·0 mA max.	35	E	E	—	—	—	—	—	—	—	—	—	**991**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
1247	**V.H.F. MEASURING DIODE**	Diode Probe	F	0·7	0·065	Peak Inverse 850 (max.) Max. R.M.S. 300	Peak 5·0 (max.) D.C. 1·0 (max.)	—	—	—	—	—	—
1561	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	2·0	Max. R.M.S. 2 x 500	D.C. Output 120·0 Max.	—	—	—	—	—	—
1603	**SHARP CUT-OFF PENTODE**	Low-noise Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
1620	**SHARP CUT-OFF PENTODE**	Low-noise Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
1805	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	1·0	Max. R.M.S. 2 x 500	D.C. Output 60·0 Max.	—	—	—	—	—	—
1815	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	2·5	Max. R.M.S. 2 x 500	D.C. Output 180·0 Max.	—	—	—	—	—	—
1832	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	1·3	Max. R.M.S. 700	D.C. Output 120·0 Max.	—	—	—	—	—	—
1852	**TELEVISION SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★
1867	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	4·0	2·4	Max. R.M.S. 2 x 350	D.C. Output 120	—	—	—	—	—	—
1875	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	2·3	Max. R.M.S. 5000	D.C. Output 5·0 Max.	—	—	—	—	—	—
1876	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	0·3	Max. R.M.S. 850	D.C. Output 5·0 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	For use as diode probe in vacuum tube voltmeters operating up to 300 Mc/s.	3	F	F	A	—	—	—	—	—	—	—	—	**1247**
—	—	—	Condenser Input to Filter = 32 μF max.	26 10 8	NC A' F	F F A'	F A'' A''	NC F F	A'' — —	NC — —	NC — —	A' — —	— — —	— — —	— — —	**1561**
—	—	0·007	★ *For additional data and notes refer type 6J7G.* *For applications critical as to microphonics, noise and hum.*	17	H	A	G_2	G_2	K	H	—	—	—	G_1	—	**1603**
—	—	0·005	★ *For additional data and notes refer type 6J7.* *For applications critical as to microphonics.*	30	S	H	A	G_2	G_3	—	H	K	—	G_1	—	**1620**
—	—	—	Condenser Input to Filter = 32 μF max.	10	A'	F	A''	F	—	—	—	—	—	—	—	**1805**
—	—	—	Condenser Input to Filter = 32 μF max.	10	A'	F	A''	F	—	—	—	—	—	—	—	**1815**
—	—	—	Condenser Input to Filter = 32 μF max.	4	A	F	F	—	—	—	—	—	—	—	—	**1832**
—	—	—	★ *For data and notes refer type* 6AC7/1852.	30	S	H	G_3	G_1	K	G_2	H	A	—	—	—	**1852**
—	—	—		8	H	A''	A'	K H	—	—	—	—	—	—	—	**1867**
—	—	—	Condenser input to filter = 0·5 μF max. Plate supply impedance = 10,000 Ω min.	26	NC	F	F	NC	NC	NC	NC	NC	—	A	—	**1875**
—	—	—	Condenser input to filter = 0·5 μF max.	26	NC	F	F	NC	NC	NC	NC	A	—	—	—	**1876**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
1877	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	4·0	0·65	Max. R.M.S. 5000	D.C. Output 3·0 Max.	—	—	—	—	—	—
1878	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	4·0	0·7	Max. R.M.S. 10,500	D.C. Output 2·0 Max.	—	—	—	—	—	—
1904	**CURRENT REGULATOR**	Current Regulator	F	30 to 80	0·1	—	—	—	—	—	—	—	—
1910	**CURRENT REGULATOR**	Current Regulator	F	5 to 15	1·4	—	—	—	—	—	—	—	—
1927	**CURRENT REGULATOR**	Current Regulator	F	40 to 120	0·18	—	—	—	—	—	—	—	—
1928	**CURRENT REGULATOR**	Current Regulator	F	80 to 240	0·18	—	—	—	—	—	—	—	—
1941	**CURRENT REGULATOR**	Current Regulator	F	80 to 200	0·3	—	—	—	—	—	—	—	—
1945	**CURRENT REGULATOR**	Current Regulator	F	80 to 120	0·275	—	—	—	—	—	—	—	—
1949	**CURRENT REGULATOR**	Current Regulator	F	30 to 90	0·3	—	—	—	—	—	—	—	—
1954	**CURRENT REGULATOR**	Current Regulator	F	100 to 160	0·15	—	—	—	—	—	—	—	—
2050	**GAS-FILLED THYRATRON**	Relay and Grid-Controlled Rectifier	H	6·3	0·6	R.M.S. 400	—	−6	—	—	—	—	—
2051	**GAS-FILLED THYRATRON**	For Relay Service	H	6·3	0·6	R.M.S. 220	—	R.M.S. 4·0	—	—	—	—	—
3006	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	0·08	Max. R.M.S. 40·0	D.C. Output 1·0	—	—	—	—	—	—
3510	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	500 Max.	0·003 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser input to filter = 0·5 μF max. Plate supply impedance = 20,000 Ω min.	10	NC	H K	NC	H	—	—	—	—	—	A	—	**1877**
—	—	—		40	H	H K	—	—	—	—	—	—	—	A	—	**1878**
—	—	—		10	NC	R	NC	R	—	—	—	—	—	—	—	**1904**
—	—	—		4	NC	R	R	—	—	—	—	—	—	—	—	**1910**
—	—	—	Permissible voltage when switching on = 150 V.	10	NC	R	NC	R	—	—	—	—	—	—	—	**1927**
—	—	—	Permissible voltage when switching on = 240 V.	10	NC	R	NC	R	—	—	—	—	—	—	—	**1928**
—	—	—		10 40	NC R	R R	NC —	R —	— —	— —	— —	— —	— —	— —	— —	**1941**
—	—	—		26	NC	NC	NC	NC	R	NC	NC	R	—	—	—	**1945**
—	—	—		10	NC	R	NC	R	—	—	—	—	—	—	—	**1949**
—	—	—		30	NC	R	—	NC	—	NC	—	R	—	—	—	**1954**
2000	—	0·26	Grid No. 2 voltage = 0. Plate Circuit Resistance = 2000 Ω. Conditions given are for Relay Service.	30	NC	H	A	NC	G_1	G_2	H	K	—	—	—	**2050**
2000	—	0·26	Grid No. 2 voltage = 0. Plate Circuit Resistance = 2000 Ω.	30	NC	H	A	NC	G_1	G_2	H	K	—	—	—	**2051**
—	—	—	For use as "C" Bias Supply Unit.	4	A	F	F	—	—	—	—	—	—	—	—	**3006**
—	—	—	For 5350 ± 500° A (Green-Yellow). Sensitivity = 3 μA/Lumen. Potassium Cathode.	10	A	NC	NC	NC	—	—	—	—	—	K	—	**3510**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
3512	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	500 Max.	0·005 Max.	—	—	—	—	—	—
3530	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100 Max.	0·002	—	—	—	—	—	—
3533	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100 Max.	0·002	—	—	—	—	—	—
3534	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90 Max.	0·002	—	—	—	—	—	—
3537	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100 Max.	0·002	—	—	—	—	—	—
3538	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100 Max.	0·002	—	—	—	—	—	—
3540	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90 Max.	0·005	—	—	—	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu$F	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 20 μA/Lumen. Caesium Cathode.	10	A	NC	NC	NC	—	—	—	—	—	K	—	**3512**
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	36	A	K	—	—	—	—	—	—	—	—	—	**3530**
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	10	A	NC	NC	K	—	—	—	—	—	—	—	**3533**
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	8	NC	A	NC	K	—	—	—	—	—	—	—	**3534**
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	37	A	K	—	—	—	—	—	—	—	—	—	**3537**
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Maximum Plate Current = 0·0075 mA. Caesium Cathode.	36	A	K	—	—	—	—	—	—	—	—	—	**3538**
—	—	—	Operational Range 6500° A to 8000° A (Red-Infra Red). Sensitivity = 125 μA/Lumen at 2600° K.	38	A	K	—	—	—	—	—	—	—	—	—	**3540**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
3541	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	100 Max.	0·002	—	—	—	—	—	—
3543	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90 Max.	0·002	—	—	—	—	—	—
3545	**VACUUM PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	250 Max.	—	—	—	—	—	—	—
3546	**GAS-FILLED PHOTO-ELECTRIC CELL**	P.E. Cell	PE	—	—	90 Max.	0·002	—	—	—	—	—	—
4060	**ELECTROMETER TRIODE**	Valve Voltmeter	F	0·7*	0·6	4	0·14	−2·5	—	—	28	0·5	—
4065	**ELECTROMETER TRIODE**	Valve Voltmeter	F	1·25	0·013	9	0·1	−2·5	—	—	80	1·7	—
4066	**ELECTROMETER TRIODE**	Valve Voltmeter	F	1·25	0·015	4·5	0·01	−3	—	—	10	1	—
4357	**NEON VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	85 to 100	10 to 40	—	—	—	—	—	—
4376	**NEON VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	90 to 100	10 Min.	—	—	—	—	—	—
4377 **4496**	**NEON VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	100 to 115	10 to 30	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen with 1·0 meg. Series Resistor. Caesium Cathode. Maximum Plate Current = 0·0075 mA.	10	A	NC	NC	K	—	—	—	—	—	—	—	**3541**
—	—	—	Operational Range 7500° A to 9500° A (Infra Red). Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Caesium Cathode. Maximum Plate Current = 0·005 mA.	39	A	K	—	—	—	—	—	—	—	—	—	**3543**
—	—	—	For Red and Infra Red Radiation. Sensitivity = 20 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Caesium Cathode. Max. Cathode Current Density = 5 $\mu A/cm^2$.	37	A	K	—	—	—	—	—	—	—	—	—	**3545**
—	—	—	For Red and Infra Red Radiation. Sensitivity = 150 μA/Lumen at 2600° K with 1·0 meg. Series Resistor. Caesium Cathode. Max. Cathode Current Density = 7·5 $\mu A/cm^2$.	37	A	K	—	—	—	—	—	—	—	—	—	**3546**
—	—	—	* Exact value of heater voltage should be adjusted to that indicated on each individual valve. Grid Current < 10^{-14} A.	4	A	F	F	—	—	—	—	—	—	G_1	—	**4060**
—	—	—	Grid Current < 12·5 x 10^{-14} A.	49	F−	A	F+	G_1	—	—	—	—	—	—	—	**4065**
—	—	—	Grid Current < 5 x 10^{-15} A.													**4066**
—	—	—	Starting Voltage 125 V. D.C. Quiescent Current 20 mA. A.C. Resistance = 75 Ω max.	10	NC	K	NC	A	—	—	—	—	—	—	—	**4357**
—	—	—	Starting Voltage 110 V. D.C. Quiescent Current 45 mA.	35 40	E	E	—	—	—	—	—	—	—	—	—	**4376**
—	—	—	Starting Voltage 130 V. D.C. max. Quiescent Current 20 mA. A.C. Resistance = 250 Ω.	40	E	E	—	—	—	—	—	—	—	—	—	**4377**
				26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	**4496**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
4624	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	7·2	1·1	800	35	−90	—	—	2300	7	3000 Ohms
4630	**AMPLIFIER TRIODE**	A.F. Pre-amplifier	F	4·2	0·25	130	8·5	−8·4	—	—	1300	—	5500 Ohms
4631	**AMPLIFIER TRIODE**	A.F. Pre-amplifier	F	2·0	0·25	130	0·7	−1·5	—	—	500	—	0·055
4636	**R.F. PENTODE**	R.F. Amplifier	H	4·0	1·1	200	3·0	−2	100	1·2	2300	—	2·2
4641	**POWER OUTPUT TRIODE**	Class "B" Power Amplifier (2 Valves)	F	4·0	2·1	1500	Zero Signal 2 x 10 Max. Signal 2 x 41	−144	—	—	—	—	—
4646	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	4·0	1·3	Max. R.M.S. 1000	D.C. Output 75·0 Max.	—	—	—	—	—	—
4652	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	F	4·0	2·4	★	★	—	—	—	—	—	—
4654K	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·35	250	72	−14	275	8·0	8500	—	0·022
4654P		Class "B" Power Amplifier				420 See Note	Zero Signal 2 x 20 Max. Signal 2 x 93	−38	See Note	Zero Signal 2 x 2·2 Max. Signal 2 x 21	—	—	—
4657	**AMPLIFIER TRIODE**	A.F. Amplifier	H	4·0	1·0	200	1·0	−1·5	—	—	2200	99	0·045
4662	**NEON TUNING INDICATOR**	Tuning Indicator	COLD	—	—	150 to 170	2·0	—	—	—	—	—	—
4671	**AMPLIFIER TRIODE**	R.F. Amplifier	H	6·3	0·15	★	★	★	—	—	★	★	★
4672	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	★	★	★	★	★	★	—	★

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
11,000	9	—		11	A	F	F	G_1	—	—	—	—	—	—	—	**4624**
6000	—	—	Stage gain = 3·6.	6	F	A	G_1	F	—	—	—	—	—	—	—	**4630**
600,000	—	—	Stage gain = 27.	6	F	A	G_1	F	—	—	—	—	—	—	—	**4631**
—	—	0·006		14	G_2	H	G_1	H	K M G_3	—	—	—	—	A	—	**4636**
Plate to Plate 40,000	68	7·0	Fixed Bias Conditions. Total Harmonic Distortion 1·9%. R.M.S. Grid to Grid volts = 210 V.	11	A	F	F	G_1	—	—	—	—	—	—	—	**4641**
—	—	—	Condenser Input to Filter 12 μF maximum. Plate Supply Impedance = 200 Ω minimum.	11	A	F	F	NC	—	—	—	—	—	—	—	**4646**
—	—	—	★ *For data and notes refer type* AX1.	10	A'	F	A''	F	—	—	—	—	—	—	—	**4652**
3500	8·8	0·8	Total Harmonic Distortion 10%. Cathode Bias Resistor 175 Ω.	30	M	H	NC	G_2	G_1	G_3	H	K	—	A	—	**4654K**
5000 Plate to Plate	48		Plate Supply Voltage = 425. Series Screen Resistor 500 Ω (425 V. supply). Total Harmonic Distortion 2·5%.	26	NC	H	H	K M	G_3	G_1	G_2	NC	—	A	—	**4654P**
—	—	3·0		14	A	H	G_1	H	K M	—	—	—	—	—	—	**4657**
—	—	—	Auxilliary Anode (A'') starting voltage 165-190 V. Auxilliary Anode Current 0·04 to 0·05 mA.	5	NC	A'	A''	K	—	—	—	—	—	—	—	**4662**
—	—	1·5	★ *For data and notes refer type* E1C.	13	H	A	G_1	H	K	—	—	—	—	—	—	**4671**
—	—	0·007	★ *For data and notes refer type* E1F.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**4672**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
4673	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	1·35	250	8·0	−2·5	200	1·5	5000	—	1·5
4682	**POWER OUTPUT PENTODE**	Class "AB" Power Amplifier (2 Valves)	H	4·0	1·0	375	Zero Signal 2 x 24 Max. Signal 2 x 29	See Note	250	Zero Signal 2 x 3·5 Max. Signal 2 x 4·0	—	—	—
4683	**POWER OUTPUT TRIODE**	Class "AB" Power Amplifier (Two Valves)	F	4·0	0·95	350	Zero Signal 2 x 43 Max. Signal 2 x 46	See Note	—	—	—	—	—
4686	**GAS TRIODE (Argon)**	Relaxation Oscillator	H	4·0	1·2	Max. Peak 300	Max. Peak 300	—	—	—	—	—	—
4687 **4687K** **4687A**	**NEON VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	85 to 100	10 to 40	—	—	—	—	—	—
4688	**POWER OUTPUT PENTODE**	Class "AB" Power Amplifier (Two Valves)	H	4·0	2·0	375	Zero Signal 2 x 48 Max. Signal 2 x 62	See Note	275	Zero Signal 2 x 5 Max. Signal 2 x 9	—	—	—
4689K **4689P**	**POWER OUTPUT PENTODE**	Class "AB" Power Amplifier (Two Valves)	H	6·3	1·35	★	★	★	★	★	—	—	—
4690	**GAS TRIODE (Helium)**	Relaxation Oscillator	H	4·0	1·3	Max. Peak 500	Max. Peak 750	—	—	—	—	—	—
4694	**POWER OUTPUT PENTODE**	Class "AB" Power Amplifier (Two Valves)	H	6·3	0·9	400	Zero Signal 2 x 22 Max. Signal 2 x 25	See Note	425	Zero Signal 2 x 2·8 Max. Signal 2 x 6·2	—	—	—
4695	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	6·7	−3	100	2·7	1700	—	0·6

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·12	Plate Current Cut-off at − 6 volts Grid Bias.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**4673**
Plate to Plate 15,000	14·0	1·5	R.M.S. Grid to Grid = 50 volts. Cathode Bias Resistor 540 Ω. Total Harmonic Distortion = 5%.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**4682**
Plate to Plate 8000	15·6	20	R.M.S. Grid to Grid volts = 102 volts. Cathode Bias Resistor 850 Ω. Total Harmonic Distortion 2·3%.	26	NC	F	F	NC	NC	G_1	NC	A	—	—	—	**4683**
—	—	2·7	Arc voltage = 17 V. Mean Plate Current 3·0 mA. Max. freq. 50,000 cycles/sec.	26	NC	H	H	K	NC	NC	NC	A	—	G_1	—	**4686**
—	—	—	Starting voltage 115 V. D.C. Quiescent Current 20 mA.	26	NC	NC	NC	NC	K	NC	NC	A	—	—	—	**4687**
				30	NC	K	NC	NC	A	NC	NC	NC	—	—	—	**4687K**
				10	A	NC	K	NC	—	—	—	—	—	—	—	**4687A**
Plate to Plate 6500	28·5	1·0	R.M.S. Grid to Grid volts = 32 volts. Cathode Bias Resistor 165 Ω. Total Harmonic Distortion 2·3%.	26	NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	**4688**
★	★	0·8	★ *For data and notes refer type* 4688.	30	M	H	A	G_2	G_1	NC	H	K G_3	—	—	—	**4689K**
				26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**4689P**
—	—	—	Arc voltage = 50 volts. Mean Plate Current 10 mA. Max. freq. 150,000 cycles/sec. Grid to Cathode capacity 3·7 $\mu\mu F$.	26	NC	H	H	K S	NC	G_1	NC	NC	—	A	—	**4690**
Plate to Plate 20,000	13·0	0·8	R.M.S. Grid to Grid volts = 18 volts. Cathode Bias Resistor 315 Ω. Total Harmonic Distortion 2·3%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**4694**
—	—	0·007	Mutual Conductance = 2 μmhos at − 46 volts Grid Bias.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**4695**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
4699 **4699N**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·0	250	72	See Note	250	8·0	14,500	—	0·02
5642	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	F	1·25	0·2	Peak Inverse 10,000 (max.)	Peak 5·0 (max.) Average 0·25 (max.)	—	—	—	—	—	—
5654	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·175	180	7·7	See Note	120	2·4	5100	—	0·5
5672	**SUBMINIATURE OUTPUT PENTODE**	Class "A" Amplifier	F	1·25	0·05	67·5	Zero Signal 3·25	—6·2	67·5	Zero Signal 1·0	—	—	—
5676	**TRIODE**	V.H.F. Amplifier	F	1·25	0·12	135	4·0	−5	—	—	1600	15	—
5678	**SUBMINIATURE R.F. PENTODE**	R.F. Amplifier	F	1·25	0·05	67·5	1·8	0	67·5	0·48	1100	—	1·0
5718	**SPECIAL QUALITY SUBMINIATURE U.H.F. TRIODE**	U.H.F. Amplifier	H	6·3	0·15 ±0·0012	100	8·5 ±2·5	See Note	—	—	5800 ±1000	27 ±4	4650 ohms
5726	**TWIN DIODE**	Half-wave Rectifier	H	6·3	0·3	Peak Inverse 360 (max.)	Peak 60 (max.)	—	—	—	—	—	—
5840	**SPECIAL QUALITY SUBMINIATURE R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	100	7·5	See Note	100	2·4	5000	—	0·26
5847	**SPECIAL QUALITY SHARP CUT-OFF PENTODE**	Wide Band Amplifier	H	6·3	0·3	160	13·0	+8·5 See Note	160	4·5	12,500	—	—
5861	**AMPLIFIER TRIODE**	U.H.F. Amplifier	H	6·3	0·4	250	20	−3·5	—	—	6000	30	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
3500	8·0	0·7	Cathode Bias Resistor 90 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**4699**
					NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	**4699N**
—	—	—	Minimum supply frequency 5Kc/s.	3	F	F	A	—	—	—	—	—	—	—	—	**5642**
—	—	—	Cathode Resistor 180 Ω. Plate Current = 10 μA. at −8·5 volts (G_1) bias. Type 5654 is a ruggedised version of type 6AK5.	21	G_1	K G_3 IS	H	H	A	G_2	K G_3 IS	—	—	—	—	**5654**
15,000	85 mW.	< 0·2		50	A	G_2	F+	G_1	F— G_3	—	—	—	—	—	—	**5672**
—	—	1·4	Plate current = 15 μA. at − 10 volts grid bias.	53	A	F+	G_1	F−	—	—	—	—	—	—	—	**5676**
—	—	< 0·01		50	A	G_2	F— G_3 M	G_1	F+ G_3	—	—	—	—	—	—	**5678**
—	—	1·3	Cathode Resistor 150 Ω. Grid No. 1 Voltage for Plate Current 10 μA. = —7 volts. Intended for oscillator service up to 1000 Mc/s.	31	G	NC	H	NC	K	H	NC	A	—	—	—	**5718**
—	—	—	Type 5726 is a ruggedised version of type 6AL5.	21	K′	D″	H	H	K″	IS	D′	—	—	—	—	**5726**
—	—	< 0·03	Cathode Resistor 150 Ω.	31	G_1	K G_3	H	K G_3	A	H	G_2	K G_3	—	—	—	**5840**
—	—	0·05 max.	Cathode Resistor 600 Ω. Special quality type for use in broad-band amplifiers.	32	G_1	NC	H	K G_3 IS	NC	A	NC	G_2	H	—	—	**5847**
—	—	1·1	Disc-seal Triode for use up to 3000 Mc/s.	43	H	H K	G_1	A	—	—	—	—	—	—	—	**5861**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance µmhos	Amplification factor	Plate resistance Meg-ohms
5881	**BEAM POWER PENTODE**	Class "A" Audio Amplifier	H	6·3	0·9	300	Zero Signal 48 Max. Signal 55	−12·5	200	Zero Signal 2·5 Max. Signal 4·7	5300	—	0·035
		Class "AB_1" Audio Amplifier				360	Zero Signal 88 Max. Signal 132	−22·5	270	Zero Signal 5 Max. Signal 15	— —	— —	— —
5882	**AMPLIFIER TRIODE**	U.H.F. Amplifier	F	1·25	0·2	★	★	★	—	—	★	★	—
5899	**SPECIAL QUALITY SUBMINIATURE R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	100	7·2	−1·1	100	2·0	4500	—	0·175 (min.)
5920	**MEDIUM µ TWIN TRIODE**	Class "A" Amplifier	H	6·3	0·4	100	8·5 ± 4	*−2·1	—	—	6000 ±1500	27	—
6007	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·013	22·5 Supply	Zero Signal 0·5 Max. Signal 0·34	0	22·5	Zero Signal 0·095 Max. Signal 0·09	420	—	0·4
						45 Supply	0·42	See Note	45	0·08	—	—	—
6008	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·0133	22·5	0·05	−1·15	18	0·01	100	—	4·0
6080	**SPECIAL QUALITY LOW µ TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3	2·5	100	100	See Note	—	—	6500	2	300 ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.C.	TYPE No.
4500	6·5	0·9	Total Harmonic Distortion 11%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**5881**
6600 Plate to Plate	26·5		Total Harmonic Distortion 2%.													
—	★	1·5	★ *For data and notes refer type* IE3.	32	G_1	NC	F	F+	F−	NC	NC	A	NC	—	—	**5882**
—	—	< 0·03	Mutual Conductance for Grid No. 1 voltage = —15·5 = 25 μmhos.	31	G_1	K G_3	H	K G_3	A	H	G_2	K G_3	—	—	—	**5899**
—	—	A^I—G_1^I 3·5 ±·05 A^{II}—G_1^{II} 3·2 ±0·5	* Cathode Resistor 250 Ω. For use in computer circuits. Life expectancy 10,000 hours.	21	A^I	A^{II}	H	H	G_1^{II}	G_1^I	K	—	—	—	—	**5920**
*	0·0018	0·2	Primarily intended for hearing aids. * High impedance choke shunted by 0·1 meg. resistor. Grid leak 10·0 meg. Total Harmonic Distortion 10%.	46	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	**6007**
*	0·006		Bias resistor 5600 Ω. * High impedance choke shunted by 0·1 meg. resistor. Grid leak 3·0 meg.													
—	—	0·2	Primarily intended for hearing aids. Plate current cut-off at − 2·3 volts grid bias. As R.C. Amplifier (22·5 V. supply). Following grid leak 5·0 meg. Plate resistor 1·0 meg. Screen resistor 3·9 meg. Grid leak 10·0 meg. Gain = 31.	46	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	**6008**
—	—	Unit 1 7·5 Unit 2 6·5	Cathode Resistor 300 Ω. Special quality type for use as Series Regulator in D.C. power supplies or in servo applications.	30	G^{II}	A^{II}	K^{II}	G^I	A^I	K^I	H	H	—	—	—	**6080**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6084	**SHARP CUT-OFF PENTODE**	Low-noise A.F. Pre-amplifier	H	6·3	0·3	250	3·0	−2	100	0·55	1850	—	2·0
6085	**TWIN TRIODE**	A.F. and Class "A" Power Amplifier	H	12·6 6·3	0·3 0·6	250	6·0	−5·6	—	—	2900	32	0·011
6086	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-amplifier	H	18·0	0·1	210	10·0 ±1·3	See Note	120	2·1 ±0·4	9000 ±1200	—	0·5
		Class "A" Power Amplifier				210 Supply	8·3	See Note	See Note	1·7	8200	—	0·44
6201	**PREMIUM QUALITY HIGH µ TWIN TRIODE**	Class "A" Amplifier	H	12·6 6·3	0·15 0·3	250 100	10·0 3·3	See Note See Note	— —	— —	5500 4000	60 57	0·011 0·0143
6211	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3 12·6	0·3 0·15	100	4·6	See Note	—	—	3600	28	7800 ohms
6227	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·75	200	30·0	−4·5	200	4·2	9000	—	—
6267	**SHARP CUT-OFF A.F. PENTODE**	A.F. Amplifier (Low-noise)	H	6·3	0·2	250	3·0	−2	140	0·55	1850	—	2·5

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu$F	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·02	As R.C. Amplifier (250 V. supply). Plate resistor 0·33 meg. Screen resistor 1·5 meg. Cathode resistor 2200 Ω. Gain = 210. Plate current cut-off at − 10 V. grid bias. Ruggedised, long-life valve.	32	G_2	IS	K	H	H	A	S	G_3	G_1	—	—	**6084**
15,000	0·28	$2{\cdot}6_{t1}$ $2{\cdot}75_{t2}$	As R.C. Amplifier (400 V. supply). Following grid leak 0·33 meg. Plate resistor 0·1 meg. Cathode resistor 2200 Ω. Gain = 24. % Values for each unit. Ruggedised, long-life tube.	32	A'	G_1'	K'	H	H	A''	G_1''	K''	H_t	—	—	**6085**
—	—	0·15	Cathode bias resistor 165 Ω. Plate current cut off at − 5 V. grid bias. Ruggedised long life tube.	32	G_2	G_1	K	H	H	A	IC	IC	G_3 IS	—	—	**6086**
20,000	0·66		Series screen resistor 5600 Ω (120 V. supply). Cathode bias resistor 180 Ω. Total harmonic distortion 10%. R.M.S. Grid voltage = 1·1 volts.													
— —	— —	Grid Drive 1·6 Cathode Drive 0·2	Plate current = 10 μA. at −12, −5 volts grid bias respectively. Cathode Resistor 200, 270 Ω. For use under shock, vibration, or cycling control operation. Type 6201 is a premium version of type 12AT7.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**6201**
—	—	2·22	Special quality type for use in Computer Circuits. Cathode Resistor 470 Ω.	32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**6211**
7000	2·5	0·1	Ruggedised, long-life tube. Total Harmonic Distortion 10%.	32	S	G_1	K	H	H	S	A	G_2	G_3	—	—	**6227**
—	—	0·025	Plate current cut-off at − 5 V. grid bias. As R.C. Amplifier (250 volts supply). Following grid leak 0·68 meg. Plate resistor 0·22 meg. Screen resistor 1·0 meg. Cathode resistor 2200 Ω. Gain = 180.	32	G_2	S	K	H	H	A	S	G_3	G_1	—	—	**6267**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6374	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	6·3	1·0	Peak Inverse 2000 (max.) Max. R.M.S. 625	Peak 900 (max.) D.C. Output 125	—	—	—	—	—	—
6375	**U.H.F. MEDIUM μ TRIODE**	U.H.F. Amplifier or Oscillator	F	1·25	0·2	150	12·0	−4·5	—	—	3400	14	4000 ohms
6463	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3 12·6	0·6 0·3	250	14·5	See Note	—	—	5200	20	—
6550	**BEAM POWER PENTODE**	Class "A" Audio Amplifier	H	6·3	1·6	250	140	−14	250	12	11,000	—	12,000 ohms
		Class "AB" Audio Amplifier				400	Zero Signal 180 Max. Signal 270	−23	275	Zero Signal 9 Max. Signal 44	—	—	—
6686	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	18·0	0·15	210	15	See Note	210	4·0	10000	—	0·4
		Class "A" Power Amplifier				210	20	See Note	210	5·3	11000	—	0·3
6687	**DUAL CONTROL HEPTODE**	Dual Control Amplifier	H	6·3	0·27	150	<0·2	See Note	75	—	—	—	—
6688	**SPECIAL QUALITY SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	190	13·0	See Note	160	3·3	16500	—	0·09

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Maximum filter input capacitor 24 µF. For use at high altitudes. Maximum average current output 150 mA.	32	IC	IC	K	H	H	IC	IC	IC	IC	A	—	**6374**
—	—	1·4	Operating conditions as oscillator at 500 Mc/s. Plate voltage 150. Cathode current 20 mA. Power output 0·45 watt.	31	G_1	—	—	F−	F+	—	—	A	—	—	—	**6375**
—	—	Unit 1 5·2 Unit 2 5·4	Cathode Resistor 620 Ω. Special quality type for use in computer circuits.	32	A''	K''	G''	H	H	A'	K'	G'	H_t	—	—	**6463**
1500 3500	12·5 55	0·85	Total Harmonic Distortion 7%. Total Harmonic Distortion 3%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**6550**
20000* 15000	— 1·0	0·02	* Choke or transformer coupling. Cathode bias resistor 180 Ω. Stage gain 170. Plate current cutoff at −7 volts grid bias. Cathode bias resistor 120 Ω. Total harmonic distortion 5%. Long life valve.	32	IS	G_1	K	H	H	IS	A	G_2	G_3	—	—	**6686**
—	—	0·08	Grid (G_1) bias −10 volts through 47000 Ω resistor. Plate Resistor 20000 Ω. Series Screen Resistor 470 Ω. Grid (G_3) Resistor 47000 Ω. Grid (G_2) Voltage 0. For use in computer circuits.	21	G_1	K G_5	F	F	A	G_2 G_4	G_3	—	—	—	—	**6687**
—	—	0·03	Cathode Resistor 630 Ω. Grid No. 3 Voltage 0. Equivalent H.F. noise Resistance 460 Ω. Plate current cutoff at −4 volts grid bias. Input conductance at 100 Mc. 500 µmhos. For use under shock conditions in wide band R.F. equipment.	32	K	G_1	K	F	F	IC	A	G_3 IS	G_2	—	—	**6688**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
6689	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	6·3	0·3	210	10 ±1·3	See Note	120	2·1 ±0·4	9000 ±1200	—	0·5
		Class "A" Power Amplifier				210	8·3	See Note	See Note	1·7	8200	—	0·44
6922	**SPECIAL QUALITY R.F. TWIN TRIODE**	Cascode R.F. Amplifier	H	6·3	0·3	100	15·0	See Note	—	—	12500	33	—
6923	**U.H.F. MEASURING DIODE**	Measuring Diode	H	6·3	0·3	Peak Inverse 1000 (max.) 3·0	— 0·5	—	—	—	—	—	—
6973	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	0·45	250	46	—15	250	3·5	4800	—	0·073
6977	**SPECIAL QUALITY VOLTAGE INDICATOR**	Voltage Indicator	F	1·0	0·03	50	585 μA. See Note	0 See Note	—	—	—	—	—
7025	**HIGH μ TWIN TRIODE**	A.F. Amplifier (Low-noise)	H	12·6 / 6·3	0·15 / 0·3	★	★	★	—	—	★	★	★
7027A	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	0·9	250	72	—14	250	5	6000	—	0·0225
7062	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3 / 12·6	0·4 / 0·2	150	8·5	—1·85	—	—	6400	46	7200 ohms
7119	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3 / 12·6	0·64 / 0·32	120	36	—2·0	—	—	15,000	24	—
7189 7189A	**BEAM POWER PENTODE**	Class "A" Amplifier	H	6·3	0·75	250	48	−7·3	250	5·5	11,300	—	0·04
		Class "AB_1" Audio Amplifier				400	Zero Signal 15 Max. Signal 105	−15	300	Zero Signal 1·6 Max. Signal 25	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·015	Cathode Resistor 165 Ω. Plate current cut-off at −5 volts grid bias. Ruggedised long life tube.	32	G_2	G_1	K	H	H	A	IC	IC	G_3 IS	—	—	**6689**
20000	0·66		Cathode Resistor 180 Ω. Series Screen Resistor 5600 Ω (120 V. supply). Total Harmonic Distortion 10%. R.M.S. Grid Voltage 1·1													
—	—	Unit 1 1·4 Unit 2 1·4	Cathode Resistor 680 Ω. Special quality type for use in computer circuits or wide band R.F. amplifiers.	32	A'	G_1'	K'	H	H	A''	G_1''	K''	IS	—	—	**6922**
—	—	—	Peak inverse plate voltage for $f > 100$ Mc/s. is $\left[1000 \times \frac{100}{f}.V\right]$ max. Peak cathode current 5 mA. maximum.	54	H	H	K	A	—	—	—	—	—	—	—	**6923**
—	—	0·7 max.		32	G_2	NC	G_1	H	H	G_1	K G_3	G_2	A	—	—	**6973**
—	—	—	Grid Resistor 100 kΩ. Conditions given for max. light output. For zero light output Grid Bias = −3 volts and Plate Current is less than 5 µA.	64	F+	G	F−	A	—	—	—	—	—	—	—	**6977**
—	—	1·7	★ *For data and notes refer type* 12AX7. Type 7025 is a low-noise version of the 12AX7.	32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**7025**
—	—	1·5	It is essential that free air circulation be provided around the bulb.	30	G_2	H	A	G_2	G_1	G_1	H	K G_3	—	—	—	**7027A**
—	—	Unit 1 2·2 Unit 2 2·3	Special quality type for use in computer circuits.	32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**7062**
—	—	Unit 1 4·0 Unit 2 4·1	Special quality type for use in computer circuits.	32	A''	G''	K''	H	H	K'	G'	H_t	A'	—	—	**7119**
—	—	0·5		32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**7189**
8000 Plate to Plate	24		Total Harmonic Distortion 4%.		G_1	G_1	K G_3	H	H	G_2	A	IC	G_2	—	—	**7189A**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
7199	**MEDIUM μ TRIODE SHARP CUT-OFF PENTODE**	Pentode Class "A" Amplifier (Low noise)	H	6·3	0·45	Supply 220	12·5	See Note	Supply 130	3·5	7000	—	0·4
		Triode Class "A" Amplifier (Low noise)				Supply 215	9	—8·5	—	—	2100	17	8100 ohms
7247	**TWIN TRIODE WITH DIS-SIMILAR UNITS**	Class "A" Amplifier (Low noise) Unit 1	H	12·6	0·15	100	0·5	—1	—	—	1250	100	0·08
				6·3	0·3	250	1·2	—2	—	—	1600	100	0·0625
		Unit 2				100	11·8	0	—	—	3100	20	6500 ohms
						250	10·5	—8·5	—	—	2200	17	7700 ohms
7316	**SPECIAL QUALITY MEDIUM μ TWIN TRIODE**	Class "A" Amplifier (Each unit)	H	12·6 6·3	0·15 0·3	100	11·8	0	—	—	3100	19·5	6250 ohms
7475	**NEON VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	90 to 110	1·0 to 8·0	—	—	—	—	—	—
7534	**SPECIAL QUALITY HIGH SLOPE POWER PENTODE**	Class "A" Amplifier	H	6·3	1·7	250	100	—15·5	150	4·0	25,000	—	0·01
7543	**LOW NOISE SHARP CUT-OFF PENTODE**	Class "A" Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
7687	**LOW NOISE TRIODE PENTODE**	Triode Class "A" Amplifier	H	6·3	0·5	215	7·5	—8·5	—	—	2500	18	0·0072
		Pentode Class "A" Amplifier				220	10	See Note	130	3·4	5800	—	0·5
9001	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·7	1400	—	>1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·06 max.	Cathode Resistor: 62 Ω.	32	A^t	A^p	G_2	H	H	K^p G_3 IS	$G_1{}^p$	K^t	G^t	—	—	**7199**
—	—	2														
—	—	1·7		32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**7247**
—	—															
—	—	1·4														
—	—															
—	—	1·5	Intended for computer application. Typical cutoff condition:— Plate Supply Voltage 250. Grid Voltage —30. Plate Load Resistor 1 MΩ. Plate Current < 30 μA.	32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**7316**
—	—	—	Starting voltage 140 V. D.C. Quiescent Current 4·0 mA. A.C. Resistance = 700 Ω.	10	A	NC	K	NC	—	—	—	—	—	—	—	**7475**
—	—	2·0 max.	For use as Series Tube in Stabilised D.C. Power Supply units.	30	IC	H	IC	G_2	G_1	IC	H	K G_3	—	—	—	**7534**
—	—	0·0035	Type 7543 is a low noise version of valve type 6AU6. ★ *For data and notes refer type* 6AU6.	21	G_1	G_3	H	H	A	G_2	K	—	—	—	—	**7543**
—	—	2·4	Plate Current = 10 μA. at −21 volts grid bias.	32	A^t	$G_1{}^p$	G_2	H	H	A^p	K^p G_3	K^t	$G_1{}^t$	—	—	**7687**
—	—	0·15	Cathode Resistor 62 Ω.													
—	—	0·01	Plate Current Cut-off at − 6 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·25 meg. Screen voltage 50 V. D.C. Grid Bias − 2·1 V. D.C. Plate Current 0·5 mA. Gain = 100.	21	G_1	K	H	H	A	G_2	K G_3 IS	—	—	—	—	**9001**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
9002	**DETECTOR OSCILLATOR AMPLIFIER TRIODE**	R.F. Amplifier	H	6·3	0·15	250 90	6·3 2·5	−7 −2·5	— —	— —	2200 1700	25 25	0·0114 0·0147
9003	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	250	6·7	−3	100	2·7	1800	—	0·7
9004	**U.H.F. DIODE**	Detector, Rectifier	H	6·3	0·15	Max. R.M.S. 117	D.C. Output 5·0 Max.	—	—	—	—	—	—
9005	**U.H.F. DIODE**	Detector, Rectifier	H	3·6	0·165	Max. R.M.S. 117	D.C. Output 1·0 Max.	—	—	—	—	—	—
9006	**U.H.F. DIODE**	Detector, Rectifier	H	6·3	0·15	R.M.S. 270	D.C. Output 5·0	—	—	—	—	—	—
13201 **13201A**	**NEON VOLTAGE STABILIZER**	Voltage Stabilizer	COLD	—	—	90 to 110	15 to 200	—	—	—	—	—	—
18004	**TELEPHONE REPEATER AMPLIFIER TRIODE**	Class "A" Power Amplifier	F	4·4	0·97	130	22	−25	—	—	1000	2·3	2300 Ohms
18013	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	4·0	1·3	200	8·0	See Notes	200	1·5	5000	—	1·0
		Class "A" Power Amplifier				200	8·0	See Notes	200	1·5	5000	—	1·0
18014	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	4·0	1·6	200	35·0	See Notes	200	4·6	8000	—	0·05
		Class "A" Power Amplifier				200	35·0	See Notes	200	4·6	8000	—	0·05
18015	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	21·0	0·285	125	4·5	See Notes	125	1·3	5500	—	0·55
		Class "A" Power Amplifier				125	8·0	See Notes	125	2·5	8300	—	0·35

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	— —	1·4		21	A	K	H	H	A	G_1	K	—	—	—	—	9002
—	—	0·01	Mutual Conductance = 2 µmhos at − 45 volts Grid Bias.	21	G_1	K	H	H	A	G_2	K G_3 IS	—	—	—	—	9003
—	—	—		13	H	A	K	H	NC	—	—	—	—	—	—	9004
—	—	—		13	H	K	A	H	IC to pin 4	—	—	—	—	—	—	9005
—	—	—	Plate Supply Impedance = 100 Ω minimum.	21	A	K	H	H	A	NC	K	—	—	—	—	9006
—	—	—	Overall length 154 m.m. Starting voltage 140 V. D.C. Quiescent Current 100 mA. A.C. Resistance = 90 Ω. Overall length 174 m.m.	10	A	NC	K	NC	—	—	—	—	—	—	—	13201 13201A
2100	0·2	4·5	Total Harmonic Distortion 5%. Long-life valve.	6	F	A	G_1	F	—	—	—	—	—	—	—	18004
20,000*	—	0·012	* Choke or transformer coupling. Cathode Bias Resistor 265 Ω. Stage gain = 100. Plate Current Cut-off at − 7 volts Grid Bias.	23	K	H	H	G_3	A	M	G_2	—	—	G_1	—	18013
30,000	0·1		Cathode Bias Resistor 265 Ω. Total Harmonic Distortion 5%. Long-life valve.													
8000*	—	0·6	* Choke or transformer coupling. Cathode Bias Resistor 125 Ω. Stage gain = 56. Plate Current Cut-off at − 15. volts Grid Bias.	23	K G_3	H	H	G_2	NC	M	A	—	—	G_1	—	18014
8000	0·8		Cathode Bias Resistor 125 Ω. Total Harmonic Distortion 3%. Long-life valve.													
16,000*	—	0·02	* Choke or transformer coupling. Cathode Bias Resistor 440 Ω. Stage gain = 50. Plate Current Cut-off at − 4·5 volts Grid Bias.	23	K	H	H	G_3 S	A	M	G_2	—	—	G_1	—	18015
30,000	0·1		Cathode Bias Resistor 200 Ω. Total Harmonic Distortion 5%. Long-life valve.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
18016	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	21·0	0·335	125	48	See Notes	125	9·5	9000	—	0·0165
		Class "A" Power Amplifier				125	48	See Notes	125	9·5	9000	—	0·0165
18040	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	18·0	0·27	210	15	See Note	210	4·0	10,000	—	0·4
		Class "A" Power Amplifier				210	20	See Note	210	5·3	11,000	—	0·3
18042	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier and Class "A" Power Amplifier	H	18·0	0·1	★	★	★	★	★	★	—	★
18043	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier and Class "A" Power Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
18045	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-Amplifier	H	18·0	0·15	210	15	See Note	210	4·0	10,000	—	0·4
		Class "A" Power Amplifier				210	20	See Note	210	5·3	11,000	—	0·3
18046	**TELEPHONE REPEATER AMPLIFIER PENTODE**	Pre-amplifier and Class "A" Power Amplifier	H	20·0	0·135	★	★	★	★	★	★	—	★
A409	**AMPLIFIER TRIODE**	Amplifier	F	4·0	0·065	150	3·5	−9	—	—	900	9	0·01
A415	**AMPLIFIER TRIODE**	Amplifier	F	4·0	0·085	150	4·0	−4·5	—	—	1500	15	0·01
A425	**AMPLIFIER TRIODE**	Amplifier	F	4·0	0·065	200	0·25	−2·5	—	—	—	25	0·08

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu$F	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
3300*	—	0·25	* Choke or transformer coupling. Cathode Bias Resistor 115 Ω. Stage gain = 20. Plate Current Cut-off at − 19 volts Grid Bias.	23	K G_3 S	H	H	G_2	NC	M	A	—	—	G_1	—	**18016**
3300	0·8		Cathode Bias Resistor 115 Ω. Total Harmonic Distortion 3%. Long-life valve.													
20,000*	—	0·02	* Choke or transformer coupling. Cathode Bias Resistor 185 Ω. Stage gain = 170. Plate Current Cut-off at − 7. volts Grid Bias.	29	H	A	G_2	G_3 S_1	S_2	G_1	K	H	—	—	—	**18040**
15,000	1·0		Cathode Bias Resistor 120 Ω. Total Harmonic Distortion 5%.													
—	—	0·015	★ *For data and notes refer type* 6086.	32	G_2	G_1	K	H	H	A	IC	IC	G_2 IS	—	—	**18042**
—	—	0·015	★ *For data and notes refer type* 6086.	32	G_2	G_1	K	H	H	A	IC	IC	G_3 IS	—	—	**18043**
20,000*	—	0·02	*Choke or transformer coupling. Cathode Bias Resistor 180Ω. Stage gain = 170. Plate Current Cut-off at — 7 volts Grid Bias.	32	IS	G_1	K	H	H	IS	A	G_2	G_3	—	—	**18045**
15,000	1·0		Cathode Bias Resistor 120Ω. Total Harmonic Distortion 5%. Long-life valve.													
★	★	0·02	★ *For data and notes refer type* 18045.	32	S	G_1	K	H	H	S	A	G_2	G_3	—	—	**18046**
—	—	4·0		10	A	F	G_1	F	—	—	—	—	—	—	—	**A409**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	4·5		10	A	F	G_1	F	—	—	—	—	—	—	—	**A415**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
320,000	—	3·0		10	A	F	G_1	F	—	—	—	—	—	—	—	**A425**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
A609	**AMPLIFIER TRIODE**	Amplifier	F	6·0	0·06	150	4·0	−9	—	—	1500	9	6000 Ohms
A615	**AMPLIFIER TRIODE**	Amplifier	F	6·0	0·08	150	4·0	−4·5	—	—	2400	15	6250 Ohms
A630	**AMPLIFIER TRIODE**	Amplifier	F	6·0	0·06	150	0·7	−1·5	—	—	1500	30	0·02
AB1	**TWIN DIODE**	Detector Rectifier	H	4·0	0·65	★	★	—	—	—	—	—	—
AB2	**TWIN DIODE**	Detector Rectifier	H	4·0	0·65	Max. R.M.S. 200 per Plate	D.C. Output 0·8 per Plate	—	—	—	—	—	—
ABC1	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	4·0	0·65	250	4·0	−7	—	—	2000	27	0·0135
ABL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector, Class "A" Power Amplifier	H	4·0	2·4	★	★	★	★	★	★	—	★
AC2	**AMPLIFIER TRIODE**	Amplifier	H	4·0	0·65	250	6·0	−5·5	—	—	2500	30	0·012
AC044	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	1·0	300	50	−38	—	—	5000	—	1200 Ohms
AD1	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	0·95	250	60	−45	—	—	6000	4	670 Ohms
AF2	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	1·1	200	4·25	−2	100	1·8	2500	—	1·4
AF3	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	0·65	250	8·0	−3	100	2·6	1800	—	1·2
AF7	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	4·0	0·65	250	3·0	−2	100	1·1	2100	—	2·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—		10 8	A F+	F A	G_1 G_1	F F−	— —	— —	— —	— —	— —	— —	— —	**A609**
—	—	—		10 8	A F+	F A	G_1 G_1	F F−	— —	— —	— —	— —	— —	— —	— —	**A615**
—	—	—		10 8	A F+	F A	G_1 G_1	F F−	— —	— —	— —	— —	— —	— —	— —	**A630**
—	—	—	★ *For data and notes refer type* AB2.	14	D_1	H	M	H	K	—	—	—	—	D_1	—	**AB1**
—	—	—		12	D_1	D_2	H	H	K M	—	—	—	—	—	—	**AB2**
—	—	1·7	As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Cathode Resistor 4000 Ω. Gain = 21.	26	M	H	H	K	D_2	D_1	NC	A	—	G_1	—	**ABC1**
★	★	—	★ *For data and notes refer type* EBL1.	26	NC	H	H	M K G_3	D_1	D_2	G_2	A	—	G_1	—	**ABL1**
—	—	1·7	As R.C. Amplifier (250 V. supply). Plate Resistor 0·32 meg. Cathode Resistor 8000 Ω. Gain = 19.	26	M	H	H	K	NC	NC	NC	A	—	G_1	—	**AC2**
2300	3·5	—		10 8	A F	F A	G_1 G_1	F F	— —	— —	— —	— —	— —	— —	— —	**AC044**
2300	4·2	23	Total Harmonic Distortion 1·5%.	26	NC	F	F	NC	NC	G_1	NC	A	—	—	—	**AD1**
—	—	0·006	Mutual Conductance = 2 μmhos at − 22 volts Grid Bias.	14 20	G_2 H	H K	G_1 G_2	H M	K M G_3 G_1	— NC	— H	— —	— —	A A	— —	**AF2**
—	—	0·003	Mutual Conductance = 2 μmhos at − 55 volts Grid Bias.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**AF3**
—	—	0·003	Plate Current Cut-off at − 5 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·32 meg. Screen Resistor 0·8 meg. Cathode Resistor 4000 Ω. Gain = 157.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**AF7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
AH1	HEXODE	Frequency Mixer	H	4·0	0·65	250	1·7	(G_1) −2	(G_{2+4}) 80	2·6	Conv. 550	—	2·0
		R.F. Amplifier				250	3·0	(G_1 & G_3) −2	80	1·1	1800	—	2·0
AK1	OCTODE	Frequency Converter	H	4·0	0·65	200	1·6	(G_4) −1·5	(G_{3+5}) 70	3·8	Conv. 600	—	1·5
AK2	OCTODE	Frequency Converter	H	4·0	0·65	250	1·6	(G_4) −1·5	(G_{3+5}) 70	3·8	Conv. 600	—	1·6
AL1	POWER OUTPUT PENTODE	Class "A" Amplifier	F	4·0	1·1	250	36·0	−15	250	6·8	2800	—	0·043
AL2 AL2X	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	4·0	1·0	250	36·0	−25	250	5·0	2600	—	0·06
AL3 AL4	POWER OUTPUT PENTODE	Class "A" "AB" Power Amplifier	H	4·0	1·75	★	★	★	★	★	★	—	★
AL5	POWER OUTPUT PENTODE	Class "A" Power Amplifier	H	4·0	2·0	★	★	★	★	★	★	—	★
AM1	TUNING INDICATOR WITH TRIODE	Tuning Indicator	H	4·0	0·3	Target Volts 250	Target Current 0·13	−5 For Shadow Angle 0°	—	—	—	—	—
AX1	FULL-WAVE GAS-FILLED RECTIFIER	Full-wave Rectifier	F	4·0	2·4	Max. R.M.S. 2 x 500	D.C. Output 125·0 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·003	Conversion Conductance = 2 µmhos at − 24 volts Grid (G_1) Bias. Oscillator Injector Grid (G_3) − 12 volts Bias. Osc. Grid (G_3) volts = 9 V. R.M.S.	26	M	H	H	K	G_3	G_4	G_2	A	—	G_1	—	**AH1**
—	—		Mutual Conductance = 2 µmhos at − 20 volts Grid Bias (G_1 and G_3 simultaneously biased).													
—	—	0·06	Conversion Conductance = 2 µmhos at − 25 volts Grid (G_4) Bias. Grid No. 2 90 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	24	A	K M G_6	H	H	G_3 G_5	G_1	G_2	—	—	G_4	—	**AK1**
				20	H	K M	A	G_2	G_1	G_3 G_5	H	—	—	G_4	—	
—	—	0·06	Conversion Conductance = 2 µmhos at − 25 volts Grid (G_4) Bias. Grid No. 2 90 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	26	M	H	H	K G_6	G_2	G_1	G_3 G_5	A	—	G_4	—	**AK2**
7000	3·1	—	Total Harmonic Distortion 6%. Cathode Bias Resistor 350 Ω.	26	NC	F G_3	F	NC	NC	G_1	G_2	A	—	—	—	**AL1**
7000	3·8	0·7	Total Harmonic Distortion = 10%. Cathode Bias Resistor 625 Ω.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**AL2**
				26	NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	**AL2X**
★	★	0·8	★ *For data and notes refer type* EL33.	26	NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	**AL3** **AL4**
★	★	0·8	★ *For data and notes refer type* EL5.	26	NC	H	H	K G_3	NC	G_1	G_2	A	—	—	—	**AL5**
—	—	—	Triode Plate Resistor 2·0 meg. Triode Plate Current 0·095 mA.	26	NC	H	H	K	NC	G_1^t	T	A^t	—	—	—	**AM1**
—	—	—	Condenser Input to Filter 64 µF max. Plate Supply Impedance per Plate = 200 Ω min. Tube voltage drop 15 volts max.	10	A'	F	A''	F	—	—	—	—	—	—	—	**AX1**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance µmhos	Amplification factor	Plate resistance Meg-ohms
AX50	**FULL-WAVE GAS-FILLED RECTIFIER**	Full-wave Rectifier	F	4·0	3·75	Max. R.M.S. 2 x 500	D.C. Output 275·0 Max.	—	—	—	—	—	—
AZ1	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	1·1	★	★	—	—	—	—	—	—
AZ3	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	4·0	2·0	Max. R.M.S. 2 x 500	D.C. Output 120·0 Max.	—	—	—	—	—	—
AZ4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	2·3	R.M.S. 2 x 300 2 x 500	D.C. Output 200·0 120·0	—	—	—	—	—	—
AZ11	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	1·1	★	★	—	—	—	—	—	—
AZ12	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	2·3	★	★	—	—	—	—	—	—
AZ31	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	1·1	R.M.S. 2 x 300 2 x 500	D.C. Output 100 60	—	—	—	—	—	—
AZ41	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	0·72	R.M.S. 2 x 300 2 x 500	D.C. Output 70 60	—	—	—	—	—	—
AZ50	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	4·0	3·0	Max. R.M.S. 2 x 500	D.C. Output 250	—	—	—	—	—	—
B240	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	2·0	0·2	150	Zero Signal 2 x 15	0	—	—	—	—	—
B405	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	0·15	150	11·0	−18	—	—	1600	5	3000 Ohms
B406	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	0·1	150	8·0	−15	—	—	1300	6	4500 Ohms
B409	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	0·15	250	12·0	−16	—	—	1800	9	5000 Ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser Input to Filter 64 µF max. Plate Supply Impedance per Plate = 200 Ω min. Tube voltage drop 15 volts max.	10	A^{I}	F	A^{II}	F	—	—	—	—	—	—	—	**AX50**
—	—	—	★ *For data and notes refer type* AZ31.	26	NC	F	F	NC	A^{I}	NC	NC	A^{II}	—	—	—	**AZ1**
—	—	—		26	NC	H	H	K	A^{II}	NC	NC	A^{I}	—	—	—	**AZ3**
—	—	—	Condenser Input to Filter 60 µF max. Plate Supply Impedances per Plate = 60 Ω min. and 100 Ω min., respectively.	26	NC	F	F	NC	A^{II}	NC	NC	A^{I}	—	—	—	**AZ4**
—	—	—	★ *For data and notes refer type* AZ31.	27	A^{I}	NC	NC	NC	F	F	NC	A^{II}	—	—	—	**AZ11**
—	—	—	★ *For data and notes refer type* AZ4.	27	A^{I}	NC	NC	NC	F	F	NC	A^{II}	—	—	—	**AZ12**
—	—	—	Condenser Input to Filter 60 µF max. Plate Supply Impedance per Plate = 60 Ω min. and 100 Ω min., respectively.	30	NC	F	—	A^{I}	—	A^{II}	—	F	—	—	—	**AZ31**
—	—	—	Condenser Input to Filter 50 µF max. Plate Supply Impedance per Plate = 100 Ω min. and 200 Ω min., respectively.	28	IC	A^{I}	IC	IC	IC	A^{II}	F	F	—	—	—	**AZ41**
—	—	—	Condenser Input to Filter 64 µF max. Plate Supply Impedance per Plate = 200 Ω min.	10	A^{I}	F	A^{II}	F	—	—	—	—	—	—	—	**AZ50**
Plate to Plate 14,000	1·3	—	Total Harmonic Distortion 10%.	24	A^{II}	G_1^{I}	F	F	G_1^{II}	A^{I}	NC	—	—	—	—	**B240**
				17	F+	A^{II}	G_1^{II}	G_1^{I}	A^{I}	F−	—	—	—	—	—	
5000	0·5	—		10	A	F	G_1	F	—	—	—	—	—	—	—	**B405**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
7000	0·3	—		10	A	F	G_1	F	—	—	—	—	—	—	—	**B406**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
12,000	0·65	—	Total Harmonic Distortion 5%.	10	A	F	G_1	F	—	—	—	—	—	—	—	**B409**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
B443	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	0·15	250	12·0	−19	150	2·4	1300	—	0·045
B605	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	6·0	0·12	150	9·0	−18	—	—	1800	5	2800 Ohms
C1	**CURRENT REGULATOR**	Current Regulator	F	80 to 200	0·2	—	—	—	—	—	—	—	—
C2	**CURRENT REGULATOR**	Current Regulator	F	35 to 100	0·2	—	—	—	—	—	—	—	—
C3	**CURRENT REGULATOR**	Current Regulator	F	100 to 200	0·2	—	—	—	—	—	—	—	—
C3M	**SPECIAL QUALITY SHARP CUT-OFF PENTODE**	Class "A" Amplifier	H	20	0·125	220	16·0	See Note	150	3·0	6500	19 (G_2 to G_1)	0·25
C8	**CURRENT REGULATOR**	Current Regulator	F	80 to 200	0·2	—	—	—	—	—	—	—	—
C9	**CURRENT REGULATOR**	Current Regulator	F	35 to 100	0·2	—	—	—	—	—	—	—	—
C10	**CURRENT REGULATOR**	Current Regulator	F	35 to 100	0·2	—	—	—	—	—	—	—	—
C12	**CURRENT REGULATOR**	Current Regulator	F	80 to 200 and 35 to 100	0·2 0·2	— —	— —	— —	— —	— —	— —	— —	— —
C243N	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·2	150	9·5	−4·5	150	2·2	2400	—	0·075
C405	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	0·3	250	20·0	−32	—	—	1900	5	2600 Ohms
C408	**AMPLIFIER TRIODE**	Amplifier	F	4·0	0·25	150	14·0	−7	—	—	2700	8	3000 Ohms
C443	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	0·25	300	20·0	−25	200	4·5	1700	—	0·037

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
20,000	1·35	—	Total Harmonic Distortion 10%.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	**B443**
5000	0·5	—		10 8	A F+	F A	G_1 G_1	F F−	— —	— —	— —	— —	— —	— —	— —	**B605**
—	—	—	Type C1 can be replaced by type C8 provided pins 1 and 2 on socket are not used.	26	NC	NC	NC	NC	R	NC	NC	R	—	—	—	**C1**
—	—	—		26	NC	NC	NC	NC	R	NC	NC	R	—	—	—	**C2**
—	—	—	Pins 1 and 2 tied together in base.	26	J	J	NC	NC	R	NC	NC	R	—	—	—	**C3**
—	—	0·018 max.	Cathode Resistor 250 Ω. Special quality General Purpose Pentode.	29	H	A	G_3	G_2	M	G_1	K IS	H	—	—	—	**C3M**
—	—	—	Pins 1 and 2 tied together in base.	26	J	J	NC	NC	R	NC	NC	R	—	—	—	**C8**
—	—	—	Pins 3, 4 and 6 connected in base. Pins 7 and 8 connected in base. Type C9 may be replaced by C10 provided pin 2 on socket is not used.	26	NC	NC	J_1	J_1	R	J_1	J_2	J_2 R	—	—	—	**C9**
—	—	—	Pins 2, 3, 4 and 6 connected in base. Pins 7 and 8 connected in base. For replacement consider type C9.	26	NC	J_1	J_1	J_1	R	J_1	J_2	J_2 R	—	—	—	**C10**
— —	— —	—	80-200 V. 0·2 A pins 5 and 8. 35-100 V. 0·2 A pins 5 and 7.	26	NC	NC	NC	NC	R_1 R_2	NC	R_2	R_1	—	—	—	**C12**
15.000	0·58	—	Total Harmonic Distortion 10%.	14 15	A F+	F A	G_1 G_1	F G_2	G_2 F−	— —	— —	— —	— —	— —	— —	**C243N**
5200	1·1	4·8		10 8	A F+	F A	G_1 G_1	F F−	— —	— —	— —	— —	— —	— —	— —	**C405**
—	—	—	For use in Valve Voltmeters and other measuring instruments.	10 8	A F+	F A	NC G_1	F F−	— —	— —	— —	— —	— —	G_1 —	— —	**C408**
15.000	2·8	1·3	Total Harmonic Distortion 10%.	10 15	A F+	F A	G_1 G_1	F G_2	G_2 F−	— —	— —	— —	— —	— —	— —	**C443**

J

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance µmhos	Amplification factor	Plate resistance Meg-ohms
C603	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	6·0	0·25	180	20·0	−40·5	—	—	1700	3	1750 Ohms
CBC1	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	13·0	0·2	250	4·0	−7	—	—	2000	27	0·0135
CBL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	44·0	0·2	200	45·0	−8·5	200	6·0	8000	—	0·04
CBL6	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	44·0	0·2	200 100	40 45	−9·2 −8	100 100	9 12	6200 6500	— —	0·037 0·02
CBL31	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	44·0	0·2	200	45	−8·5	200	6·0	8000	—	0·035
CC1	**AMPLIFIER TRIODE**	Amplifier	H	13·0	0·2	200	4·6	−3·7	—	—	2000	50	0·025
CC2	**AMPLIFIER TRIODE**	Amplifier	H	13·0	0·2	200	6·0	−4	—	—	2500	30	0·012
CCH35	**TRIODE HEXODE**	Frequency Converter	H	7·0	0·2	★	★	★	★	★	★	—	★
CF1	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	13·0	0·2	200	3·0	−2	100	0·9	3200	—	0·7
CF2	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	13·0	0·2	200	4·5	−2	100	1·4	2000	—	1·4
CF3	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	13·0	0·2	200	8·0	−3	100	2·6	1800	—	0·9
CF7	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	13·0	0·2	200	3·0	−2	100	1·1	2100	—	2·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
4800	0·79	—		10 8	A F+	F A	G_1 G_1	F F−	— —	— —	— —	— —	— —	— —	— —	**C603**
—	—	—	As R.C. Amplifier. Plate Resistor 0·1 meg. Cathode Resistor 8000 Ω. Gain = 14.	26	M	H	H	K	D_2	D_1	NC	A	—	G_1	—	**CBC1**
4500	4·0	1·0	Total Harmonic Distortion 10%.	26	NC	H	H	M K G_3	D_1	D_2	G_2	A	—	G_1	—	**CBL1**
5000 2200	3·8 1·8	0·5	Total Harmonic Distortion 10% in each case.	26	NC	H	H	M K G_3	D_1	D_2	G_2	A	—	G_1	—	**CBL6**
4500	4·0	—	Total Harmonic Distortion 10%.	30	M	H	A	D_1	D_2	G_2	H	K G_3	—	G_1	—	**CBL31**
—	—	—		26	M	H	H	K	NC	NC	NC	A	—	G_1	—	**CC1**
—	—	1·7	As R.C. Amplifier (250 V. supply). Plate Resistor 0·32 meg. Cathode Resistor 8000 Ω. Gain = 19.	26	M	H	H	K	NC	NC	NC	A	—	G_1	—	**CC2**
—	—	0·003	★ *For data and notes refer type* ECH35.	30	M	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**CCH35**
—	—	0·003	Plate Current Cut-off at − 4·5 V. Grid Bias. As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·25 meg. Cathode Resistor 4000 Ω. Gain = 135.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**CF1**
—	—	0·003	Mutual Conductance = 2 µmhos at − 22 volts Grid Bias.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**CF2**
—	—	0·003	Mutual Conductance = 2 µmhos at − 55 volts Grid Bias.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**CF3**
—	—	0·003	Plate Current Cut-off at − 5 V. Grid Bias. As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·25 meg. Cathode Resistor 4000 Ω. Gain = 135.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**CF7**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
CF50	**MICROPHONE PRE-AMPLIFIER PENTODE**	A.F. Amplifier	H	30·0	0·2	250	1·5	−2	100	0·3	3300	—	2·5
CK1	**OCTODE**	Frequency Converter	H	13·0	0·2	200	1·6	(G_4) −1·5	(G_{3+5}) 70	3·8	Conv. 600	—	1·5
CL1	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	13·0	0·2	250	20	−23	250	2·0	1900	—	0·08
CL2	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	24·0	0·2	200	40	−19	100	5·0	3100	—	0·023
CL4	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	33·0	0·2	★	★	★	★	★	★	—	★
CL6	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	35·0	0·2	200	45	See Note	100	5·5	8000	—	0·022
CL33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	33·0	0·2	200	45	−8·5	200	6·0	8000	—	0·035
CY1	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	20·0	0·2	Max. R.M.S. 250	D.C. Output 80 Max.	—	—	—	—	—	—
CY2	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·2	★	★	—	—	—	—	—	—
CY31	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	20·0	0·2	Max. R.M.S. 250	D.C. Output 120 Max.	—	—	—	—	—	—
CY32	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·2	Max. R.M.S. 250	D.C. Output 120 Max.	—	—	—	—	—	—
DA50	**DIODE**	Rectifier	F	1·2	0·3	125 Max.	0·2 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	0·03	As R.C. Amplifier (250 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·3 meg. Screen Resistor 0·9 meg. Cathode Resistor 2000 Ω. Gain = 315.	26	K G_3	H	H	K G_3	M	NC	G_2	A	—	G_1	—	**CF50**
—	—	0·06	Conversion Conductance = 2 µmhos at — 25 volts Grid (G_4) Bias. Grid No. 2 90 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	26	M	H	H	K G_6	G_2	G_1	G_3 G_5	A	—	G_4	—	**CK1**
12,500	1·7	—		26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**CL1**
5000	3·0	1·5	Total Harmonic Distortion 10%.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**CL2**
★	★	1·0	★ *For data and notes refer type* CL33.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**CL4**
4500	4·0	0·5	Self Bias only. Cathode Bias Resistor 190 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K M G_3	NC	NC	G_2	A	—	G_1	—	**CL6**
4500	4·0	—	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**CL33**
—	—	—	Condenser Input to Filter 32 µF maximum. Plate Supply Impedance = 125 Ω minimum.	26	NC	H	H	K	NC	NC	NC	A	—	—	—	**CY1**
—	—	—	★ *For data and notes refer type* CY32.	26	K'	H	H	K''	A'	NC	NC	A''	—	—	—	**CY2**
—	—	—	Condenser Input to Filter 32 µF maximum. Plate Supply Impedance = 125 Ω minimum.	30	NC	H	NC	—	A	—	H	K	—	—	—	**CY31**
—	—	—	Condenser Input to Filter 32 µF maximum. Plate Supply Impedance per Plate = 125 Ω minimum.	30	NC	H	A''	K''	A'	—	H	K'	—	—	—	**CY32**
—	—	—	Designed especially for measuring instruments.	2	F	D	F	—	—	—	—	—	—	—	—	**DA50**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
DA90	**R.F. DIODE**	Rectifier	H	1·4	0·15	★	★	—	—	—	—	—	—
DAC21	**DIODE TRIODE**	Detector A.F. Amplifier	F	1·4	0·025	★	★	★	—	—	★	★	★
DAC31	**DIODE TRIODE**	Detector A.F. Amplifier	F	1·4	0·025	120 90	0·75 0·45	0 0	— —	— —	400 300	40 40	0·1 0·13
DAC32	**DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	F	1·4	0·05	★	★	★	—	—	★	★	★
DAF40	**DIODE SHARP CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	F	1·4	0·025	120	0·85	0	See Note	0·2	700	—	2·6
DAF41	**DIODE SHARP CUT-OFF PENTODE**	Detector A.F. Amplifier	F	1·4	0·025	Supply 180 Max.	—	−0·2 Max.	Supply 180 Max.	—	—	—	—
DAF70	**DIODE PENTODE**	Detector A.F. Amplifier	F	1·25	0·025	67·5	0·8	0	67·5	0·3	450	—	0·2
DAF91	**DIODE SHARP CUT-OFF PENTODE**	Detector A.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DAF92	**DIODE SHARP CUT-OFF PENTODE**	Detector A.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DAF96	**DIODE R.F. PENTODE**	Detector R.F. Amplifier	F	1·4	0·025	★	★	★	★	★	★	—	★
DBC31	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	F	1·4	0·05	120 90	1·6 1·4	−1·5 −0·5	— —	— —	900 850	25 25	0·028 0·03
DC70	**U.H.F. TRIODE**	U.H.F. Amplifier and Oscillator	F	1·25	0·2	150	12·0	−4·5	—	—	3400	14	4000 Ohms
DC80	**AMPLIFIER TRIODE**	U.H.F. Amplifier	F	1·25	0·2	★	★	★	—	—	★	★	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* 1A3.	21	H	D	K	NC	IC	D	H	—	—	—	—	**DA90**
—	—	1·6	★ *For data and notes refer type* DAC31.	30	F– S	M	A	NC	NC	D	NC	F+	—	G_1	—	**DAC21**
— —	— —	1·6	As R.C. Amplifier (120 V. supply). Plate Resistor 0·5 meg. Grid volts = 0. Gain = 25.	30	M	F+	A	NC	D	NC	F–	NC	—	G_1	—	**DAC31**
—	—	1·0	★ *For data and notes refer type* 1H5GT.	30	M	F+	A	NC	D	—	F–	NC	—	G_1	—	**DAC32**
—	—	0·0065	Series Screen Resistor 270,000 Ω (120 V. supply). Mutual Conductance = 7 μmhos at – 6·8 volts Grid Bias.	28	F+ G_3 IS	A	D	IC	G_2	G_1	IC	F– IS	—	—	—	**DAF40**
—	—	0·0065	As R.C. Amplifier (150 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·47 meg. Screen Resistor 2·2 meg. Grid Bias 0 volts. Gain = 112.	28	F+ G_3 IS	A	D	IC	G_2	G_1	IC	F– IS	—	—	—	**DAF41**
—	—	0·15	As R.C. Amplifier (67·5 V. Supply). Following Grid Leak 3·3 meg. Plate Resistor 1·0 meg. Screen Resistor 4·7 meg.	31	A	NC	G_1	F– G_3	F+	D	NC	G_2	—	—	—	**DAF70**
—	—	—	★ *For data and notes refer type* 1S5.	21	F– G_3	NC	D	G_2	A	G_1	F+	—	—	—	—	**DAF91**
—	—	—	★ *For data and notes refer type* 1U5.	21	F– G_3	A	G_2	D	NC	G_1	F+	—	—	—	—	**DAF92**
—	—	—	★ *For data and notes refer type* 1AH5.	21	F– G_3	NC	D	G_2	A	G_1	F+	—	—	—	—	**DAF96**
— —	— —	2·6	As R.C. Amplifier (120 V. supply). Plate Resistor 0·5 meg. Plate Current 0·14 mA. Grid Bias – 1 volt. Gain = 19·5.	30	M	F+	A	D_2	D_1	NC	F–	NC	—	G_1	—	**DBC31**
—	—	1·4	Operating conditions as oscillator at 500 Mc/s. Plate voltage 150 V. Cathode current 20 mA. Power output 0·45 watts.	31	G_1	NC	NC	F–	F+	NC	NC	A	—	—	—	**DC70**
—	★	1·5	★ *For data and notes refer type* 1E3.	32	G_1	NC	F	F+	F–	NC	NC	A	NC	—	—	**DC80**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
DC90	**V.H.F. MEDIUM µ TRIODE**	R.F. Amplifier	F	1·4	0·05	90	3·0	−3·0	—	—	1100	11·5	—
DCC90	**H.F. TWIN TRIODE**	Class "C" R.F. Power Amplifier	F	2·8 1·4	0·11 0·22	★	★	★	—	—	—	—	—
DCH31	**TRIODE** **HEXODE**	Frequency Converter	F	1·4	0·15	120 90	1·0 1·0	0 0	60 60	1·5 1·5	450 Conv. 450	— —	1·0 0·5
DF21	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·025	120	1·0	−0·5	See Note	0·21	660	—	3·0
DF22	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	120	1·4	−1·5	See Note	0·3	1100	—	2·5
DF31	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	1·4	0·025	120	1·2	0	See Note	0·25	650	—	1·5
DF32	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	120	1·4	−1·5	See Note	0·3	1100	—	1·0
DF33	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DF64	**SUB MINIATURE A.F. PENTODE**	A.F. Amplifier	F	0·625	0·01	15·0	0·060	−0·62	15·0	0·02	100	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	3·3	When used as self-oscillating frequency-changer in F.M. battery operated receivers. Grid Resistor 1 mΩ. Grid Current 6 µA. R.M.S. Oscillator Voltage 5·5.	21	F−	A	A	IC	G_1	G_1	F+	—	—	—	—	**DC90**
—	★	3·2	★ *For data and notes refer type* 3A5.	21	F−	A''	G_1''	F_t	G_1'	A'	F+	—	—	—	—	**DCC90**
— —	— —	—	Conversion Conductance = 4·5 µmhos at − 8 volts Grid Bias. Osc. Plate 60 V. at 2·0 mA. Osc. Grid Leak 35,000 Ω. Osc. Grid Current 0·22 mA. Osc. G_m = 1300 µmhos.	30	M	F−	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	F+	NC	—	$G_1{}^h$	—	**DCH31**
—	—	0·006	Series Screen Resistor 0·12 meg. (120 V. supply). Mutual Conductance = 6·6 µmhos at − 4·6 volts Grid Bias.	30	F−	M	A	G_2	NC	G_3	NC	F+	—	G_1	—	**DF21**
—	—	0·005	Series Screen Resistor 0·1 meg (120 V. supply). Mutual Conductance = 11 µmhos at − 8 volts Grid Bias.	30	F−	M	A	G_2	NC	G_3	NC	F+	—	G_1	—	**DF22**
—	—	0·005	Series Screen Resistor 0·12 meg. (120 V. supply). Mutual Conductance = 6·5 µmhos at − 4·5 volts Grid Bias. As R.C. Amplifier (120 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 1·0 meg. Screen Resistor 5·0 meg. Grid Bias − 0·5 volt. Gain = 81.	30	M	F+	A	G_2	G_3	NC	F−	NC	—	G_1	—	**DF31**
—	—	0·005	Series Screen Resistor 0·1 meg. (120 V. supply). Mutual Conductance = 11 µmhos at − 9 volts Grid Bias.	30	M	F+	A	G_2	G_3	NC	F−	NC	—	G_1	—	**DF32**
—	—	0·007	★ *For data and notes refer type* 1N5GT.	30	M	F+	A	G_2	NC	—	F− G_3	NC	—	G_1	—	**DF33**
—	—	<0·2	As R.C. Amplifier (18 V. supply). Plate Resistor 2·2 mΩ. Following Grid Resistor 5·0 mΩ. Series Screen Resistor 3·3 mΩ. Grid Bias −0·62 Gain 26·5 For use in hearing aids.	50	A	G_2	F−	G_1	F+ G_3	—	—	—	—	—	—	**DF64**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
DF65	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·0133	★	★	★	★	★	★	—	★
DF66	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·015	22·5	0·05	−1·05	22·5	0·015	100	—	2·0
DF67	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·0133	★	★	★	★	★	★	—	★
DF70	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	F	0·625	0·025	30	0·05	−1·85	30	0·018	100	—	2·5
DF72	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·25	0·025	67·5	1·7	0	67·5	0·75	1000	—	0·65
DF73	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·25	0·025	67·5	1·7	0	67·5	0·5	800	—	0·45
DF91	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DF92	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DF96	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·025	★	★	★	★	★	★	—	★
DF97	**REMOTE CUTOFF R.F. PENTODE**	R.F. Amplifier	F	1·4	0·025	★	★	★	★	★	★	—	★
DH76	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	13·0	0·16	250	—	−3	—	—	1200	70	0·058

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·2	★ *For data and notes refer type* 6008.	45	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	**DF65**
—	—	0·15	Primarily intended for hearing aids. Plate Current Cut-off at − 2·5 volts Grid Bias. As R.C. Amplifier (22·5 V. supply). Plate Resistor 1·0 meg. Screen Resistor 2·0 meg. Grid Bias − 0·625 volts. Cathode Current 16 μA. Gain = 33.	50	A	G_2	F+	G_1	F− G_3	—	—	—	—	—	—	**DF66**
—	—	0·2	★ *For data and notes refer type* 6008.	46	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	**DF67**
—	—	0·5	Primarily intended for hearing aids. Plate Current Cut-off at − 2·75 V. Grid Bias. As R.C. Amplifier (45 V. supply). Following Grid Leak 10·0 meg. Screen Resistor 3·5 meg. Plate Resistor 1·0 meg. Grid Leak 3·0 meg. Gain = 38.	31	IC	G_1	IC	F− IS G_3	F+	IC	A	G_2	—	—	—	**DF70**
—	—	0·014	Plate Current = 20 μA at − 5 volts Grid Bias.	31	NC	G_1	NC	F− G_3 IS	F+	NC	A	G_2	—	—	—	**DF72**
—	—	0·014	Mutual Conductance = 8 μmhos at − 14 -volts Grid Bias.	31	NC	G_1	NC	F− G_3 IS	F+	NC	A	G_2	—	—	—	**DF73**
—	—	0·01	★ *For data and notes refer type* 1T4.	21	F− IS G_3	A	G_2	NC	F− IS G_3	G_1	F+	—	—	—	—	**DF91**
—	—	0·008	★ *For data and notes refer type* 1L4.	21	F− IS G_3	A	G_2	NC	F− IS G_3	G_1	F+	—	—	—	—	**DF92**
—	—	0·008	★ *For data and notes refer type* IAJ4.	21	F− G_3 IS	A	G_2	NC	F− G_3 IS	G_1	F+	—	—	—	—	**DF96**
—	—	0·01	★ *For data and notes refer type* 1AN5.	21	F− IS	A	G_2	G_3	F− IS	G_1	F+	—	—	—	—	**DF97**
—	—	1·8	As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Cathode Resistor 3000 Ω.	30	S	H	A	D_1	D_2	—	H	K	—	G_1	—	**DH76**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
DH77	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
DH107	**DUO-DIODE HIGH µ TRIODE**	Class "A" Amplifier	H	19·0	0·1	250	1·0	−3·0	—	—	70	1200	0·058
DK21	**OCTODE**	Frequency Converter	F	1·4	0·05	120	1·5	(G_4) 0	(G_5) See Note	0·25	500	—	1·5
DK31	**OCTODE**	Frequency Converter	F	1·4	0·05	90	1·0	(G_4) 0	(G_5) 90	0·2	Conv. 400	—	1·0
DK32	**PENTAGRID**	Frequency Converter	F	1·4	0·05	★	★	★	★	★	★	—	★
DK40	**OCTODE**	Frequency Converter	F	1·4	0·05	135	1·0	(G_4) 0	(G_5) See Note	0·25	425	—	1·0
DK91	**PENTAGRID**	Frequency Converter	F	1·4	0·05	★	★	★	★	★	★	—	★
DK92	**HEPTODE**	Frequency Converter	F	1·4 for Par'l filaments	0·05	★	★	★	★	★	★	—	★
				1·35 for Series filament		★	★	★	★	★	★	—	★
DK96	**HEPTODE**	Frequency Converter	F	1·4	0·025	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	2·1	★ *For data and notes refer type* 6AT6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**DH77**
—	—	1·35	Cathode Resistor 2000 Ω.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**DH107**
—	—	0·1	Series Screen Resistor 0·12 meg. (120 V. supply). Conversion Conductance = 5 µmhos at − 8 V. Grid (G_4) Bias. Grid No. 2 Current 2·4 mA through 25,000 Ω. Osc. Grid (G_{1+3}) Resistor 35,000 Ω. Osc. Grid Current 0·2 mA. Osc. G_m = 950 µmhos.	30	F+ G_6	M	A	G_5	G_1 G_3	NC	G_2	F−	—	G_4	—	**DK21**
—	—	0·1	Conversion Conductance = 4 µmhos at − 8 volts Grid (G_4) Bias. Osc. Grid (G_{1+3}) Current 0·2 mA. Osc. Grid Resistor 35,000 Ω. Osc. G_m = 800 µmhos.	30	M	F+	A	G_5	G_1 G_3	G_2	F−	NC	—	G_4	—	**DK31**
★	★	—	★ *For data and notes refer type* 1A7GT.	30	M	F+	A	G_3 G_5	G_1	G_2	F−	NC	—	G_4	—	**DK32**
—	—	0·125	Series Screen Resistor 0·27 meg. (135 V. supply). Conversion Conductance = 4·2 µmhos at − 18·5 V. Grid (G_4) Bias. Grid No. 2 Current 2·6 mA through 26,000 Ω. Osc. Grid (G_{1+3}) Resistor 35,000 Ω. Osc. Grid voltage = 8 volts R.M.S.	28	F+ G_6	A	G_2	G_1 G_3	G_5	G_4	NC	F−	—	—	—	**DK40**
—	—	0·4	★ *For data and notes refer type* 1R5.	21	F− G_5	A	G_2 G_4	G_1	F − G_5	G_3	F+	—	—	—	—	**DK91**
— —	— —	0·11	★ *For data and notes refer type* 1AC6.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5	—	—	—	—	**DK92**
—	—	—	★ *For data and notes refer type* 1AB6.	21	F−	A	G_2	G_1	G_4	G_3	F+ G_5	—	—	—	—	**DK96**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
DL21	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	★	★	★	★	★	★	—	★
DL31	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	120	5·0	−4·8	120	0·9	1400	—	0·35
						90	4·0	−3·0	90	0·7	1300	—	0·3
DL33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★
				2·8	0·05								
DL35	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★
DL36	**BEAM POWER OUTPUT TETRODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★
DL41	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·05	120	5·0	−5·8	120	0·82	1350	—	0·165
				1·4	0·1	120	10·0	−5·6	120	1·65	2550	—	0·08
				2·8	0·05	120	9·0	−5·45	120	1·45	2450	—	0·095
DL64	**SUB MINIATURE POWER PENTODE**	Class "A" Power Amplifier	F	1·25	0·01	15	0·15	−1·55	15	0·034	180	—	0·4
DL65	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·013	★	★	★	★	★	★	—	★
						★	★	★	★	★	★	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	0·5	★ *For data and notes refer type* DL31.	30	F− G_3	NC	A	G_2	G_t	NC	NC	F+	—	—	—	**DL21**
24,000 22,500	0·27 0·16	0·5	Total Harmonic Distortion 10% in each case.	30	NC	F+	A	G_2	G_1	NC	F−	NC	—	—	—	**DL31.**
★	★	—	★ *For data and notes refer type* 3Q5G.	30	NC	F+	A	G_2	G_1	—	F−	F_t G_3	—	—	—	**DL33**
★	★	—	★ *For data and notes refer type* 1C5G.	30	NC	F+	A	G_2	G_1	—	F− G_3	NC	—	—	—	**DL35**
★	★	—	★ *For data and notes refer type* 1Q5G.	30	NC	F+	A	G_2	G_1	—	F−	NC	—	—	—	**DL36**
24,000	0·27	0·5	Total Harmonic Distortion 10%. Filament voltage applied between pins 1 and 8. Grid voltage referred to pin 8.	28	F_t	A	IC	NC	G_2	G_1	F+	F− G_3	—	—	—	**DL41**
12,000	0·55		Total Harmonic Distortion 10%. Filament voltage applied between pins 1 and 7, 8 tied together. Grid voltage referred to pins 7 and 8.													
13,500	0·49		Total Harmonic Distortion 10%. Filament voltage applied between pins 7 and 8. Grid voltage referred to pin 8.													
100,000	950 µW.	<0·25	Total Harmonic Distortion 10%. Maximum R.M.S. input voltage 0·85. For use in hearing aids.	50	A	G_2	F−	G_1	F+ G_3	—	—	—	—	—	—	**DL64**
★ ★	★ ★	0·2	★ *For data and notes refer type* 6007.	45	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	**DL65**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
DL66	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·015	22·5 45	0·3 0·9	−1·4 −3·0	22·5 45	0·075 0·2	350 —	— —	0·3 —
DL67	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·013	★	★	★	★	★	—	—	—
DL68	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·025	22·5 Supply	0·6	−2	22·5	0·15	430	—	—
DL70	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·1	150	7·0	−8·5	90	1·2	1000	—	—
DL71	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·025	45	0·6	−1·25	45	0·15	500	—	0·35
DL72	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·025	45	1·25	−4·5	45	0·4	500	—	0·225
DL75	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·25	0·025	90	1·3	−3	90	0·3	670	—	0·5
DL91	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	★	★	★	★	★	★	—	★
DL92	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·1 0·05	★	★	★	★	★	★	—	★
DL93	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·2 0·1	★	★	★	★	★	★	—	★
DL94	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·1 0·05	★	★	★	★	★	★	—	★
DL95	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·1 0·05	★	★	★	★	★	★	—	★
DL96	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4 2·8	0·05 0·025	★	★	★	★	★	★	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
— —	0·0027 0·0165	0·2	Primarily intended for hearing aids. Total Harmonic Distortion 10%.	50	A	G_2	F+	G_1	F− G_3	—	—	—	—	—	—	**DL66**
★	★	0·2	★ *For data and notes refer type* 6007.	46	F+ G_3	A	G_2	G_1	F−	—	—	—	—	—	—	**DL67**
37,500	0·005	0·15	Primarily intended for hearing aids. Total Harmonic Distortion 10%.	50	A	G_2	F+	G_1	F− G_3	—	—	—	—	—	—	**DL68**
—	0·63	—		31	IC	G_1	NC	F− G_3	F+	NC	A	G_2	—	—	—	**DL70**
*	0·006	—	Primarily intended for hearing aids. * High Impedance Choke shunted by 0·1 meg Resistor. Grid Leak 10·0 meg. Total Harmonic Distortion 10%.	31	IC	G_1	IC	F− G_3	F+	IC	A	G_2	—	—	—	**DL71**
*	0·023	—	Primarily intended for hearing aids. * High Impedance Choke shunted by 0·1 meg Resistor. Grid Leak 10·0 meg. Total Harmonic Distortion 10%.	31	IC	G_1	IC	F− G_3	F+	IC	A	G_2	—	—	—	**DL72**
60,000	0·047	0·5	Primarily intended for hearing aids. Total Harmonic Distortion 10%.	31	IC	G_1	NC	F− G_3	F+	NC	A	G_2	—	—	—	**DL75**
★	★	—	★ *For data and notes refer type* 1S4.	21	F− G_3	A	G_1	G_2	F− G_3	A	F+	—	—	—	—	**DL91**
★	★	0·4	★ *For data and notes refer type* 3S4.	21	F−	A	G_1	G_2	F_t G_3	A	F+	—	—	—	—	**DL92**
★	★	0·34	★ *For data and notes refer type* 3A4.	21	F−	A	G_2	G_1	F_t G_3	A	F+	—	—	—	—	**DL93**
★	★	0·2	★ *For data and notes refer type* 3V4.	21	F−	A	G_2	NC	F_t G_3	G_1	F+	—	—	—	—	**DL94**
★	★	0·2	★ *For data and notes refer type* 3V4.	21	F−	A	G_1	G_2	F_t G_3	A	F+	—	—	—	—	**DL95**
★	★	—	★ *For data and notes refer type* 3C4.	21	F−	A	G_2	NC	F_t G_3	G_1	F+	—	—	—	—	**DL96**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
DLL21	**TWIN POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	1·4	0·1	120	Zero Signal 2 x 1·0 Max. Signal 2 x 4·15	−8·7	120	Zero Signal 0·32 Max. Signal 2·2	—	—	—
				1·4	0·2	135	Zero Signal 2 x 2·0 Max. Signal 2 x 8·8	−9·4	135	Zero Signal 0·7 Max. Signal 4·6	—	—	—
				2·8	0·1	135	Zero Signal 2 x 1·5 Max. Signal 2 x 8·2	−9·5	135	Zero Signal 0·5 Max. Signal 4·8	—	—	—
DLL31	**TWIN POWER OUTPUT PENTODE**	Power Amplifier	F	1·4	0·1	120	Zero Signal 2 x 1·0 Max. Signal 2 x 4·15	−7·5	120	Zero Signal 0·32 Max. Signal 2·2	—	—	—
				1·4	0·2	135	Zero Signal 2 x 2·0 Max. Signal 2 x 8·0	−9·0	135	Zero Signal 0·64 Max. Signal 4·6	—	—	—
DM70	**TUNING INDICATOR**	Tuning Indicator	F	1·4	0·025	★	★	★	—	—	—	—	—
DM71	**TUNING INDICATOR**	Tuning Indicator	F	1·4	0·025	★	★	★	—	—	—	—	—
DM160	**SPECIAL QUALITY VOLTAGE INDICATOR**	Voltage Indicator	F	1·0	0·03	★	★	★	—	—	—	—	—
DY30	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	F	1·25	0·2	★	★	—	—	—	—	—	—
DY70	**HALF-WAVE VACUUM RECTIFIER**	High Voltage Rectifier	F	1·25	0·14	Peak Inverse 10,000	2·0 Max.	—	—	—	—	—	—
DY80	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	F	1·25	0·2	Peak Inverse 23000 (max.)	Peak 10 (max.) Average 1·0 (max.)	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
30,000 Plate to Plate	0·6		Total Harmonic Distortion 3%. Filament voltage applied to pins 1 and 8.													
15,000 Plate to Plate	1·5	0·6	Total Harmonic Distortion 3·8%. Filament voltage applied to pins 1 and 7, 8 tied together.	30	F_t G_3' G_3''	G_1'	A'	G_2' G_2''	G_1''	A''	F	F	—	—	—	**DLL21**
15,000 Plate to Plate	1·5		Total Harmonic Distortion 3·6%. Filament voltage applied to pins 7 and 8.													
30,000 Plate to Plate	0·6	—	Total Harmonic Distortion 5·7%.	30	F+	F+	A'	G_1'	G_1''	A''	F—	G_2	—	—	—	**DLL31**
15,000 Plate to Plate	1·5		Total Harmonic Distortion 3%.													
—	—	—	★ *For data and notes refer type* 1M3.	31	G_1	IC	NC	F	F	NC	NC	A	—	—	—	**DM70**
—	—	—	★ *For data and notes refer type* 1M3, *except length of lead wires.* Short leads for use in socket.	31	G_1	IC	NC	F	F	NC	NC	A	—	—	—	**DM71**
—	—	—	★ *For data and notes refer type* 6977.	64	F+	G	F—	A	—	—	—	—	—	—	—	**DM160**
—	—	—	★ *For data and notes refer type* 1B3GT.	30	IC	F	IC	—	IC	—	F IS	IC	—	A	—	**DY30**
—	—	—		3	F	F	A	—	—	—	—	—	—	—	—	**DY70**
—	—	—	* Do not use.	32	F IS	F	* IC	F IS	F	F IS	* IC	F	F IS	A	—	**DY80**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
DY86	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	H	1·4	0·55	★	★	—	—	—	—	—	—
DY87	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	H	1·4	0·55	★	★	—	—	—	—	—	—
E1C	**AMPLIFIER TRIODE**	R F and A.F. Amplifier	H	6·3	0·15	180 135 90	4·5 3·5 2·5	−5 −3·75 −2·5	— — —	— — —	2000 1900 1700	25 25 25	0·0125 0·0132 0·0147
E1F	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·15	250	2·0	−3	100	0·7	1400	—	1·5
E1T	**SPECIAL QUALITY DECADE COUNTER**	Decade Counter	H	6·3	0·3	Supply Voltage .. .. 300 volts Grid No. 2 Voltage .. .. .. 300 volts Cathode Current .. .. 0·95 mA. Grid No. 2 Current .. .. .. 0·1 mA. Target Voltage .. .. 300 volts							
E2F	**REMOTE CUT-OFF R.F. PENTODE**	U.H.F. Amplifier	H	6·3	0·15	250	6·7	−3	100	2·7	1700	—	0·6
E80CC	**SPECIAL QUALITY TWIN TRIODE**	A.F. and Class "A" Power Amplifier	H	12·6 6·3	0·3 0·6	★	★	★	—	—	★	★	★
E80CF	**SPECIAL QUALITY RF TRIODE PENTODE**	Class "A" Amplifier	H	6·3	0·33	★	★	★	★	★	★	★	★
E80F	**SPECIAL QUALITY SHARP CUT-OFF PENTODE**	Low Noise A.F. Pre-Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
E80L	**SPECIAL QUALITY POWER PENTODE**	Class "A" Power Amplifier	H	6·3	0·75	★	★	★	★	★	★	—	—
E80T	**SPECIAL QUALITY BEAM DEFLECTION TUBE**	Impulse Phase Discriminator	H	6·3	0·15	Plate Voltage .. .. 100 volts Grid No. 3, Grid No. 4 Voltage .. 250 volts Grid No. 2 Voltage .. .. .. 70 volts Grid No. 1 Voltage .. .. .. 0 volts Deflection Plate No. 1 Voltage .. 120 volts Deflection Plate No. 2 Voltage .. 120 volts							

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.C.	TYPE No.
—	—	—	★ *For data and notes refer type* 1S2.	32	F K IS	F	IC	F K IS	F	F K IS	IC	F	F K IS	A	—	**DY86**
—	—	—	★ *For data and notes refer type* 1S2-A.	32	F K IS	F	IC	F K IS	F	F K IS	IC	F	F K IS	A	—	**DY87**
— — —	— — —	1·5	As R.C. Amplifier (180 V. supply). Plate Resistor 0·3 meg. Cathode Resistor 6000 Ω. Gain = 19.	13	H	A	G_1	H	K	—	—	—	—	—	—	**E1C**
—	—	0·007	As R.C. Amplifier (250 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·3 meg. Screen Resistor 1·0 meg. Cathode Resistor 4000 Ω. Gain = 184.	22	H	G_2	G_3	H	K	G_1	A	—	—	—	—	**E1F**
			Grid No. 1 Voltage .. .. +11·9 volts. Cathode Resistor .. .. 15,000 ohms. Plate No. 1 Resistor .. .. 39,000 ohms. Grid No. 4 Resistor .. .. 47,000 ohms Plate No. 2 Resistor .. .. 1 MΩ.	65	1 H 12 H	2 G_1	3 K G_3 G_5	4 D''	5 A_2	6 G_4	7 T	8 A_1	9 D'	10 G_2	11 IC	**E1T**
—	—	0·007	Mutual Conductance = 2 μmhos at − 40 volts Grid Bias.	22	F	G_2	G_3	F	K	G_1	A	—	—	—	—	**E2F**
★	★	2·6$_{t1}$ 2·75$_{t2}$	★ *For data and notes refer type* 6085.	32	A'	G_1'	K'	H	H	A''	G_1''	K''	H_t	—	—	**E80CC**
—	—	P < 0·025 T 1·5	★ *For data and notes refer type* 7643.	32	A^t	$G_1{}^p$	G_2	H	H	A^p	K^p G_3 IS	K^t	G^t	—	—	**E80CF**
—	—	0·02	★ *For data and notes refer type* 6084.	32	G_2	IS	K	H	H	A	S	G_3	G_1	—	—	**E80F**
★	★	0·1	★ *For data and notes refer type* 6227.	32	IS	G_1	K	H	H	IS	A	G_2	G_3	—	—	**E80L**
			Plate Current .. .. 1·35 mA. Cathode Current .. .. 2·0 mA. Type E80T with ribbon-shaped beam is for use as impulse phase discriminator in impulse-governed oscillators in communication equipment, carrier telephone systems and frequency standards.	32	G_3 G_4	G_1	K G_5	H	H	G_2	D''	IC	D'	A	—	**E80T**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
E81L	**SPECIAL QUALITY POWER PENTODE**	Class "A" Power Amplifier	H	6·3	0·48	★	★	★	★	★	★	—	—
E83F	**SPECIAL QUALITY HIGH SLOPE PENTODE**	Pre-Amplifier and Class "A" Power Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
E88CC	**SPECIAL QUALITY R.F. TWIN TRIODE**	Cascode R.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
E90CC	**SPECIAL QUALITY TWIN TRIODE**	A.F. Amplifier	H	6·3	0·4	★	★	★	—	—	★	★	★
E90F	**SPECIAL QUALITY SHARP CUTOFF R.F. PENTODE**	Class "A" Amplifier	H	6·3	0·15	Supply 250	7·4	See Note	Supply 150	2·9	4600	48 (G_2 to G_1)	1·0
E91H	**SPECIAL QUALITY DUAL CONTROL HEPTODE**	Dual Control Amplifier	H	6·3	0·27	★	★	★	★	★	★	—	★
E92CC	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3	0·4	150	8·5	−1·7	—	—	6000	45	—
E99F	**SPECIAL QUALITY SEMI-REMOTE CUT-OFF R.F. PENTODE**	Class "A" Amplifier	H	6·3	0·15	Supply 250	9·2	See Note	Supply 100	3·3	3800	(G_2 to G_1) 25	1·0
E130L	**SPECIAL QUALITY HIGH-SLOPE POWER PENTODE**	Series Stabiliser or Power Amplifier	H	6·3	1·7	★	★	★	★	★	★	★	★
E180CC	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3 12·6	0·4 0·2	★	★	★	—	—	★	★	★
E180F	**SPECIAL QUALITY SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
E182CC	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3 12·6	0·64 0·32	★	★	★	—	—	★	★	—
E182F	**SPECIAL QUALITY SHARP CUT-OFF PENTODE**	Wide Band Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	0·02	★ *For data and notes refer type* 6686.	32	IS	G_1	K	H	H	IS	A	G_2	G_3	—	—	**E81L**
—	—	0·015	★ *For data and notes refer type* 6689.	32	G_2	G_1	K	H	H	A	IC	IC	G_3 IS	—	—	**E83F**
—	—	1·4	★ *For data and notes refer type* 6922.	32	A'	G_1'	K'	H	H	A''	G_1''	K''	IS	—	—	**E88CC**
—	—	3·8 t_1 3·7 t_2	★ *For data and notes refer type* 5920.	21	A'	A''	H	H	G_1''	G_1'	K	—	—	—	—	**E90CC**
—	—	0·0035 max.	Cathode Resistor 100 Ω.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**E80F**
—	—	0·08	★ *For data and notes refer type* 6687.	21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**E91H**
—	—	Unit 1 2·2 Unit 2 2·1		21	A	A''	H	H	G''	G'	K	—	—	—	—	**E92CC**
—	—	0·0035 max.	Cathode Resistor 80 Ω.	21	G_1	K	H	H	A	G_2	G_3 IS	—	—	—	—	**E99F**
—	—	2·0 max.	★ *For data and notes refer type* 7534.	30	IC	H	IC	G_2	G_1	IC	H	K G_3	—	—	—	**E130L**
—	—	Unit 1 2·2 Unit 2 2·3	★ *For data and notes refer type* 7062.	32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**E180CC**
★	★	0·03	★ *For data and notes refer type* 6688.	32	K	G_1	K	H	H	IC	A	G_3 IS	G_2	—	—	**E180F**
—	—	Unit 1 4·0 Unit 2 4·1	★ *For data and notes refer type* 7119.	32	A''	G''	K''	H	H	K'	G'	H_t	A'	—	—	**E182CC**
—	—	0·05 max.	★ *For data and notes refer type* 5847.	32	G_1	NC	H	K G_3 IS	NC	A	NC	G_2	H	—	—	**E182F**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
E188CC	**SPECIAL QUALITY TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3	0·335	★	★	★	—	—	★	★	★
E406N	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	1·0	500	24·0	−68	—	—	3000	6	2000 Ohms
E408N	**POWER OUTPUT TRIODE**	Class "A" Power Amplifier	F	4·0	1·0	400	30·0	−36	—	—	2700	8	3000 Ohms
E415	**AMPLIFIER TRIODE**	A.F. Amplifier	H	4·0	1·0	200	6·0	−8	—	—	1400	15	0·011
E424	**AMPLIFIER TRIODE**	A.F. Amplifier	H	4·0	1·0	200	6·0	−6	—	—	1800	24	0·013
E424N	**AMPLIFIER TRIODE**	A.F. Amplifier	H	4·0	1·0	200	6·0	−3·5	—	—	2400	30	0·0125
E442	**R.F. TETRODE**	R.F. Amplifier	H	4·0	1·0	200	1·5	−1·3	100	0·6	900	—	0·8
E442S	**R.F. TETRODE**	R.F. Amplifier	H	4·0	1·0	200	4·0	−2	60	0·5	1000	—	0·4
E443H	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	1·1	250	36·0	−15	250	6·8	3000	—	0·043
E443N	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	1·1	400	30·0	−40	200	5·2	1800	—	0·055
E444N	**DIODE TETRODE**	Detector R.F. Amplifier	H	4·0	1·1	200	4·0	−3	90	0·5	Max. 3000	—	0·2
E446	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	1·1	200	3·0	−2	100	1·2	2300	—	2·2

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·4	★ *For data and notes refer type* 7308.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**E188CC**
11,500	5·3	2·9	Total Harmonic Distortion 5%.	10	A	F	G_1	F	—	—	—	—	—	—	—	**E406N**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
6000	2·6	12·0	Total Harmonic Distortion 5%	10	A	F	G_1	F	—	—	—	—	—	—	—	**E408N**
				8	F+	A	G_1	F−	—	—	—	—	—	—	—	
—	—	3·5		14	A	H	G_1	H	K	—	—	—	—	—	—	**E415**
				14	A	H	G_1	H	K M	—	—	—	—	—	—	
				15	H	A	G_1	K	H	—	—	—	—	—	—	
—	—	3·5		14	A	H	G_1	H	K	—	—	—	—	—	—	**E424**
				14	A	H	G_1	H	K M	—	—	—	—	—	—	
				15	H	A	G_1	K	H	—	—	—	—	—	—	
—	—	2·0		14	A	H	G_1	H	K	—	—	—	—	—	—	**E424N**
				14	A	H	G_1	H	K M	—	—	—	—	—	—	
				15	H	A	G_1	K	H	—	—	—	—	—	—	
—	—	0·005		14	G_2	H	G_1	H	K M	—	—	—	—	A	—	**E442**
—	—	0·02		14	G_2	H	G_1	H	K M	—	—	—	—	A	—	**E442S**
7000	3·1	1·1	Total Harmonic Distortion 10%.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	**E443H**
				15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	
13,500	5·4	0·9	Total Harmonic Distortion 10%.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	**E443N**
				15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	
—	—	0·003	G_m measurement at zero bias.	18	D	K M	H	H	G_2	G_1	—	—	—	A	—	**E444N**
				17	H	G_2	D	G_1	K M	H	—	—	—	A	—	
—	—	0·006	Plate Current Cut-off at − 5 volts Grid Bias.	14	G_2	H	G_1	H	K M G_3	—	—	—	—	A	—	**E446**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
E447	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	4·0	1·1	200	4·5	−2	100	1·9	2300	—	1·0
E452T	**R.F. TETRODE**	R.F. Amplifier	H	4·0	1·0	200	3·0	−2	100	0·7	2000	—	0·45
E454	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	4·0	1·2	200	3·5	−3·5	—	—	1600	30	0·019
E463	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	4·0	1·35	250	36·0	−22	250	3·2	2700	—	0·037
E810F	**SPECIAL QUALITY HIGH SLOPE SHARP CUT-OFF PENTODE**	Wide Band Amplifier	H	6·3	0·34	Supply 135	35	Supply +12·5 See Note	Supply 165	5	50,000	58 (G_2 to G_1)	—
EA40	**DIODE**	Detector Rectifier	H	6·3	0·2	Peak Inverse 6500	Max. 25·0	—	—	—	—	—	—
EA50	**DIODE**	Diode Detector for Television Receivers	H	6·3	0·15	200 Max.	D.C. Output 5·0 Max.	—	—	—	—	—	—
EA52	**U.H.F. MEASURING DIODE**	Measuring Diode	H	6·3	0·3	★	★	—	—	—	—	—	—
EA76	**DIODE**	Detector Rectifier	H	6·3	0·15	150 Max.	D.C. Output 9·0 Max.	—	—	—	—	—	—
EAA91	**TWIN DIODE**	Detector Half-wave Rectifier	H	6·3	0·3	★	★	—	—	—	—	—	—
EAB1	**TRIPLE DIODE**	Detector Rectifier	H	6·3	0·2	Max. Peak 200 per Plate	D.C. Output 0·8 Max. per Plate	—	—	—	—	—	—
EABC80	**TRIPLE DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·55	★	★	★	—	—	★	★	★
EAC91	**DIODE TRIODE**	U.H.F. Converter	H	6·3	0·3	200	7·5	−2·8	—	—	2800	36	0·0128

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·006	Mutual Conductance = 2 μmhos at − 50 volts Grid Bias.	14	G_2	H	G_1	H	K M G_3	—	—	—	—	A	—	**E447**
				20	H	K	G_2	M	G_1	NC	H	—	—	A	—	
—	—	0·003		14	G_2	H	G_1	H	K M	—	—	—	—	A	—	**E452T**
—	—	—		20	H	K	A	D_2	M	D_1	H	—	—	G_1	—	**E454**
8000	4·1	1·0	Total Harmonic Distortion 10%.	18	A	K G_3	H	H	G_2	G_1	—	—	—	—	—	**E463**
				20	H	K	A	NC	G_1	G_2	H	—	—	—	—	
—	—	0·04 max.	Cathode Resistor 360 Ω. Input Conductance at 100 Mc/s. 2000 μmhos.	32	K	G_1	K	H	H	G_2	A	G_3 IS	G_2	—	—	**E810F**
—	—	—	Peak Plate Current = 100 mA max.	28	H	—	—	D	—	—	K	H	—	—	—	**EA40**
—	—	—	Cathode to Plate capacity 2·1 $\mu\mu$F.	1	H	K	H	D	—	—	—	—	—	—	—	**EA50**
—	—	—	★ *For data and notes refer type* 6923.	54	H	H	K	A	—	—	—	—	—	—	—	**EA52**
—	—	—	Peak Inverse voltage = 420 V. maximum. Peak Plate Current = 54 mA maximum.	47	H	A	K	H	A	—	—	—	—	—	—	**EA76**
—	—	—	★ *For data and notes refer type* 6AL5.	21	K'	A''	H	H	K''	IS	A'	—	—	—	—	**EAA91**
—	—	—	For replacement consider type EBC3 using Grid No. 1 as the third diode with the triode plate connected as a grounded shield.	26	M	H	H	K	D_3	NC	D_2	D_1	—	—	—	**EAB1**
—	—	2·2	★ *For data and notes refer type* 6AK8.	32	D_3	D_2	K_{d2}	H	H	D_1	IS K_t K_{d1} K_{d3}	G_1	A_t	—	—	**EABC80**
—	—	1·6	Frequency limit as Frequency Changer, 300 Mc/s. As Oscillator, 600 Mc/s.	21	D	K^d	H	H	K^t	G_1	A_t	—	—	—	—	**EAC91**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
EAF41	**DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·2	250	5·0	−2	See Note	1·6	1800	—	1·2
EAF42	**DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EB4	**TWIN DIODE**	Detector Rectifier	H	6·3	0·2	★	★	—	—	—	—	—	—
EB11	**TWIN DIODE**	Detector Rectifier	H	6·3	0·2	★	★	—	—	—	—	—	—
EB34	**TWIN DIODE**	Detector Rectifier	H	6·3	0·2	200 Max. per Plate	D.C. Output 0·8 Max. per Plate	—	—	—	—	—	—
EB41	**TWIN DIODE**	Detector Rectifier	H	6·3	0·3	150 Max. per Plate	D.C. Output 9·0 Max. per Plate	—	—	—	—	—	—
EB91	**TWIN DIODE**	Detector Rectifier	H	6·3	0·3	★	★	—	—	—	—	—	—
EBC3	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·2	★	★	★	—	—	★	★	★
EBC11	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·2	250	5·0	−8	—	—	2200	25	0·0115
EBC33	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	6·3	0·2	250	5·0	−5·5	—	—	2000	30	0·015
EBC41	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·23	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·002	Mutual Conductance = 18 μmhos at − 40 volts Grid (G_1) Bias. Series Screen Resistor 95,000 Ω (250 V. supply). As R.C. Amplifier (250 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·2 meg. Screen Resistor 0·8 meg. Cathode Resistor 1600 Ω. Gain = 105.	28	H	A	D	IC	G_2	G_1	K G_3 IS	H	—	—	—	**EAF41**
—	—	0·002	★ *For data and notes refer type* 6CT7.	28	H	A	D	G_3	G_2	G_1	K IS	H	—	—	—	**EAF42**
—	—	—	★ *For data and notes refer type* EB34.	26	M	H	H	K'	D_1	IS	D_2	K''	—	—	—	**EB4**
—	—	—	★ *For data and notes refer type* EB34.	27	D_2	K''	K' M	NC	H	H	NC	D_1	—	—	—	**EB11**
—	—	—		30	IS M	H	D_1	K'	D_2	—	H	K''	—	—	—	**EB34**
—	—	—	Peak Plate Current per Plate = 54 mA maximum.	28	H	NC	K''	D_2	IS	D_1	K'	H	—	—	—	**EB41**
—	—	—	★ *For data and notes refer type* 6AL5.	21	K'	A''	H	H	K''	IS	A'	—	—	—	—	**EB91**
—	—	1·3	★ *For data and notes refer type* EBC33.	26	M	H	H	K	D_2	D_1	NC	A	—	G_1	—	**EBC3**
—	—	—	As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Cathode Resistor 5000 Ω. Gain = 18.	27	A	G_1	K M	NC	H	H	D_1	D_2	—	—	—	**EBC11**
—	—	1·4	As R.C. Amplifier (300 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 23·5	30	M	H	A	D_1	D_2	—	H	K	—	G_1	—	**EBC33**
—	—	1·3	★ *For data and notes refer type* 6CV7.	28	H	A	G_1	IS	D_2	D_1	K	H	—	—	—	**EBC41**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
EBC80	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·23	★	★	★	—	—	★	★	★
EBC81	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·23	★	★	★	—	—	★	★	★
EBC90	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
EBC91	**DUO-DIODE HIGH μ TRIODE**	Detector A.F. Amplifier	H	6·3	0·3	★	★	★	—	—	★	★	★
EBF2 **EBF2G**	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EBF11	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·2	250	5·0	−2	100 See Note	1·8	1800	—	2·0
EBF32 **EBF35**	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·2	250	5·0	−2	100 See Note	1·6	1800	—	1·3
EBF80	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EBF81	**DUO-DIODE MEDIUM CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EBF83	**DUO DIODE R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EBF89	**DUO DIODE REMOTE CUTOFF R.F. AMPLIFIER**	R.F. Amplifier Detector	H	6·3	0·3	★	★	★	★	★	★	—	★
EBL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	6·3	1·18	250	36	−6	250	4·0	9000	—	0·05

TECHNICAL DATA

Load resist- ance Ohms	Power output Watts	Grid- plate- capaci- tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S	TYPE No.
—	—	1·3	★ *For data and notes refer type* 6BD7.	32	A	G_1	K	H	H	D_2	IS	D_2	IC	—	—	**EBC80**
—	—	1·3	★ *For data and notes refer type* 6BD7.	32	A	G_1	K	H	H	D_1	IS	D_2	IC	—	—	**EBC81**
—	—	2·1	★ *For data and notes refer type* 6AT6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**EBC90**
—	—	—	★ *For data and notes refer type* 6AV6.	21	G_1	K	H	H	D_2	D_1	A	—	—	—	—	**EBC91**
—	—	0·002	★ *For data and notes refer type* EBF32.	26	M	H	H	K G_3	D_2	D_1	G_2	A	—	G_1	—	**EBF2**
				30	H	M	A	G_2	D_1	D_2	G_3 K	H	—	G_1	—	**EBF2G**
—	—	0·002	Series Screen Resistor 85,000 Ω (250 V. supply). Mutual Conductance = 9 μmhos at − 45 volts Grid Bias.	27	G_2	G_1	K G_3 M	A	H	H	D_1	D_2	—	—	—	**EBF11**
—	—	0·002	Series Screen Resistor 0·1 meg (250 V. supply). Mutual Conductance = 18 μmhos at − 38 volts Grid Bias.	30	M	H	A	D_2	D_1	G_2	H	K G_3	—	G_1	—	**EBF32**
					H	M	A	G_2	D_1	D_2	G_3 K	H	—	G_1	—	**EBF35**
—	—	0·002	★ *For data and notes refer type* 6N8.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**EBF80**
—	—	0·002	★ *For data and notes refer type* 6AD8.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**EBF81**
—	—	2·5	★ *For data and notes refer type* 6DR8.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**EBF83**
—	—	0·0025	★ *For data and notes refer type* 6DC8.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**EBF89**
7000	4·5	0·8	Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	D_1	D_2	G_2	A	—	G_1	—	**EBL1**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EBL21	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	6·3	0·8	250 250	44 36	−6·2 −6·0	275 250	5·8 4·5	9500 9000	— —	0·05 0·05
EBL31	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	6·3	1·5	250	36	−6·0	250	5·0	9500	—	0·05
EC31	**POWER OUTPUT TRIODE**	A.F. and Class "A" Power Amplifier	H	6·3	0·65	250	20	−16	—	—	3200	10·5	3300 Ohms
EC40	**V.H.F. HIGH μ TRIODE**	Grounded Grid Amplifier	H	6·3	0·48	275	15·0	1·5	—	—	12000	77	6500 ohms
EC50	**GAS-FILLED TRIODE**	Relaxation Oscillator	H	6·3	1·3	Peak 1000 Max.	Peak 750 Max. Average 10 Max.	—	—	—	—	—	—
EC52	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·43	250	10	−2·6	—	—	6500	60	9200 Ohms
EC53	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·25	200	7·5	−3·3	—	—	2900	33	0·0114
EC55	**DISC-SEAL TRIODE**	U.H.F. Amplifier	H	6·3	0·4	★	★	★	—	—	★	★	—
EC56	**LIGHTHOUSE TRIODE**	U.H.F. Amplifier	H	6·3	1·25	250	30	−2	—	—	14,000	50	—
EC57	**DISC SEAL TRIODE**	U.H.F. Power Amplifier	H	6·3	0·65	180	60·0	−1·8	—	—	19000	35	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate-capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
5700 7000	5·5 4·5	1·4	Total Harmonic Distortion 10% in each case.	29	H	A	G_1	G_2	D_2	D_1	K G_3	H	—	—	—	**EBL21**
7000	4·3	—	Total harmonic distortion 10%. Cathode bias resistor=150Ω	30	M	H	A	D_1	D_2	G_2	H	K G_3	—	G_1	—	**EBL31**
10,000	0·5	—	Total Harmonic Distortion 5%. As R.C. Amplifier (550 V. supply). Plate Resistor 0·16 meg. Cathode Resistor 9000 Ω. Gain = 7·4.	30	—	H	A	—	G_1	—	H	K	—	—	—	**EC31**
—	—	0·04	Input Resistance at 300 Mc/s. 80 Ω.	30	H	G_1	G_1	A	G_1	G_1	K	H	—	—	—	**EC40**
—	—	2·3	Grid Resistor not less than 750 Ω per max instantaneous unit voltage applied to Grid. Max. Frequency 150 Kc/s.	26	NC	H	H	K	NC	G_1	NC	NC	—	A	—	**EC50**
—	—	3·1	Frequency limit as Oscillator 400 Mc/s.	33	H	G_1	K	A	NC	NC	NC	NC	H	—	—	**EC52**
—	—	1·3	Frequency limit 600 Mc/s.	16	H	K	H	G_1	A	—	—	—	—	—	—	**EC53**
—	—	1·1	★ *For data and notes refer type* 5861.	43	H	H K	G_1	A	—	—	—	—	—	—	—	**EC55**
—	—	1·5	Connection No. 9 used for R.F. connection to Cathode. As an Oscillator at 4000 Mc/s. power output = 0·5 watts. As an Amplifier with 50 Mc/s band-width at 4000 Mc/s voltage gain = 9 to 10 dB.	52	1 IC	2 H	3 K	4 —	5 K	6 —	7 H	8 K	9 K	10 G_1	11 A	**EC56**
—	—	1·6	Pins 3 and 8 are connected internally to the R.F. cathode connection. Power output 3 watts at 4000 Mc/s. with 50 Mc/s. bandwidth between half power points.	52	IC	H	K	—	IC	—	H	K	—	—	—	**EC57**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EC70	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·15	★	★	★	—	—	★	★	★
EC71	**SUB-MINIATURE V.H.F. TRIODE**	V.H.F. Amplifier	H	6·3	0·15	★	★	★	—	—	★	★	★
EC80	**V.H.F. TRIODE**	Grounded Grid Amplifier	H	6·3	0·48	★	★	★	—	—	★	★	—
EC81	**U.H.F. TRIODE**	Oscillator (Up to 1500 Mc/s)	H	6·3	0·2	★	★	—	—	—	—	—	—
EC86	**V.H.F. TRIODE**	V.H.F. Amplifier V.H.F. Self-Oscillating Mixer	H	6·3	0·2	★	★	★	—	—	★	—	—
EC90	**V.H.F. POWER TRIODE**	A.F. Class "C" Power Amplifier	H	6·3	0·15	★	★	★	—	—	★	★	★
EC91	**U.H.F. TRIODE**	Grounded-Grid Amplifier	H	6·3	0·3	250	10	−1·5	—	—	8500	100	0·012
EC92	**TRIODE**	R.F. Amplifier	H	6·3	0·15	★	★	★	—	—	★	★	—
EC93	**U.H.F. TRIODE**	U.H.F. Amplifier Oscillator	H	6·3	0·225	★	★	★	—	—	★	★	★
EC95	**SEMI-REMOTE CUT-OFF V.H.F. TRIODE**	R.F. Amplifier	H	6·3	0·18	★	★	★	—	—	★	★	—
ECC31	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·95	250	6·0	−4·6	—	—	2300	32	0·014
ECC32	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·95	250	6·0	−4·6	—	—	2300	32	0·014
ECC33	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·4	250	9·0	−4	—	—	3600	35	9700 Ohms

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	★	—	★ *For data and notes refer type* 6K4.	31	G_1	A	H	A	NC	H	K	A	—	—	—	**EC70**
			★ *For data and notes refer type* 5718.	31	G	NC	H	NC	K	H	NC	A	—	—	—	**EC71**
—	—	3·4	★ *For data and notes refer type* 6Q4.	32	G_1	G_1	K	H	H	NC	G_1	G_1	A	—	—	**EC80**
—	★	1·5	★ *For data and notes refer type* 6R4.	32	G_1	NC	K	H	H	NC	NC	A	NC	—	—	**EC81**
★	—	2·0	★ *For data and notes refer type* 6CM4.	32	A	G	K	H	H	G	K	G	A	—	—	**EC86**
—	—	1·6	★ *For data and notes refer type* 6C4.	21	A	IC	H	H	A	G_1	K	—	—	—	—	**EC90**
—	—	2·5	Frequency limit 250 Mc/s.	21	G_1	K	H	H	K	G_1	A	—	—	—	—	**EC91**
—	—	1·5	★ *For data and notes refer type* 6AB4.	21	A	IS	H	H	NC	G_1	K	—	—	—	—	**EC92**
—	—	1·7	★ *For data and notes refer type* 6BS4.	21	A	G_1	H	H	K	G_1	A	—	—	—	—	**EC93**
—	—	0·38	★ *For data and notes refer type* 6ER5.	21	K	G	H	H	A	IS	K	—	—	—	—	**EC95**
—	—	3·4$_{t2}$ 3·75$_{t1}$	Values are for each unit.	30	NC	H	A'	G_1'	G_1''	A''	H	K	—	—	—	**ECC31**
—	—	4·3	As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 27·5. Values are for each unit.	30	G_1'	A'	K'	G_1''	A''	K''	H	H	—	—	—	**ECC32**
—	—	2·5	As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 28. Values are for each unit.	30	G_1'	A'	K'	G_1''	A''	K''	H	H	—	—	—	**ECC33**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance µmhos	Amplification factor	Plate resistance Meg-ohms
ECC34	**TWIN TRIODE**	A.F. Amplifier	H	6·3	0·95	250	10	−16	—	—	2200	11·5	5200 Ohms
ECC35	**HIGH µ TWIN TRIODE**	A.F. Amplifier	H	6·3	0·4	250	2·3	−2·5	—	—	2000	68	0·034
ECC40	**TWIN TRIODE**	Class "A" Power Amplifier and A.F. Amplifier	H	6·3	0·6	250	6·0	See Note	—	—	2900	32	0·011
ECC70	**SUB-MINIATURE MEDIUM µ TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	6·3	0·3	100	6·5	−1·0	—	—	5400	35	6500 ohms
ECC81	**HIGH µ TWIN TRIODE**	R.F. Amplifier	H	12·6 6·3	0·15 0·3	★	★	★	—	—	★	★	—
ECC82	**TWIN TRIODE**	A.F. Amplifier	H	12·6 6·3	0·15 0·3	★	★	★	—	—	★	★	★
ECC83	**HIGH µ TWIN TRIODE**	A.F. Amplifier	H	12·6 6·3	0·15 0·3	★	★	★	—	—	★	★	★
ECC84	**TWIN TRIODE**	R.F. Amplifier	H	6·3	0·4	★	★	★	—	—	★	★	—
ECC85	**HIGH µ TWIN TRIODE**	R.F. Amplifier	H	6·3	0·435	★	★	★	—	—	★	★	—
ECC86	**R.F. TWIN TRIODE (for direct use with 6v, 12v or 24v car battery)**	R.F. Amplifier (Each Unit)	H	6·3	0·33	★	★	★	—	—	★	—	★
ECC88	**HIGH-SLOPE V.H.F. TWIN TRIODE**	R.F. Amplifier (Each Unit)	H	6·3	0·365	★	★	★	—	—	★	★	—

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	4·0	Values are for each unit.	30	G_1'	A'	K'	G_1''	A''	K''	H	H	—	—	—	**ECC34**
—	—	$2{\cdot}5_{t1}$ $3{\cdot}0_{t2}$	As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 4700 Ω. Gain = 46. Values are for each unit.	30	G_1'	A'	K'	G_1''	A''	K''	H	H	—	—	—	**ECC35**
15,000	0·28	$2{\cdot}8_{t1}$ $2{\cdot}7_{t2}$	Cathode Bias Resistor 920 Ω. Total Harmonic Distortion 8·5%. As R.C. Amplifier (400 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 3900 Ω. Gain = 25. Values are for each unit.	28	H	A''	G_1''	K'' IS	A'	G_1'	K'	H	—	—	—	**ECC40**
—	—	1·6	Intended for use at V.H.F.	31	A''	G''	H	K''	K'	H	G'	A'	—	—	—	**ECC70**
—	—	★	★ *For data and notes refer type* 12AT7.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**ECC81**
—	—	1·6	★ *For data and notes refer type* 12AU7.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**ECC82**
—	—	1·7	★ *For data and notes refer type* 12AX7.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	H_t	—	—	**ECC83**
—	—	$1{\cdot}1_{t1}$ $1{\cdot}2_{t2}$	★ *For data and notes refer type* 6CW7.	32	K''	G_1'' S	A''	H	H	G_1'	K_i'	K_o'	A'	—	—	**ECC84**
—	—	1·5	★ *For data and notes refer type* 6AQ8.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	S	—	—	**ECC85**
— — —	— — —	1·3	★ *For data and notes refer type* 6GM8.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**ECC86**
—	—	1·4	★ *For data and notes refer type* 6DJ8.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**ECC88**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
ECC91	**TWIN TRIODE**	R.F. Amplifier	H	6·3	0·45	★	★	★	—	—	★	★	★
ECC186	**SPECIAL QUALITY MEDIUM μ TWIN TRIODE**	Computer Use (Each Unit)	H	12·6 6·3	0·15 0·3	★	★	★	—	—	★	★	★
ECC189	**SEMI-REMOTE CUT-OFF R.F. TWIN TRIODE**	R.F. Amplifier (Each Unit)	H	6·3	0·365	★	★	★	—	—	★	—	★
ECC230	**SPECIAL QUALITY LOW μ TWIN TRIODE**	Series Regulator or Booster Triode	H	6·3	2·5 ±0·24	★	—	★	—	—	—	—	—
ECF1	**TRIODE REMOTE CUT-OFF PENTODE**	A.F. and R.F. Amplifier	H	6·3	0·2	150 250	8·0 5·0	−3 −2	— See Note	— 2·0	2200 2000	20 —	9000 Ohms 1·6
ECF80	**MEDIUM μ TRIODE REMOTE CUTOFF R.F. PENTODE**	Frequency Converter Amplifier	H	6·3	0·45	★	★	★	★	★	★	★	★
ECF82	**MEDIUM μ TRIODE SHARP CUTOFF R.F. PENTODE**	Frequency Converter	H	6·3	0·45	★	★	★	★	★	★	★	★
ECF86	**MEDIUM μ TRIODE HIGH SLOPE PENTODE**	Frequency Converter	H	6·3	0·38	★	★	★	★	★	★	★	★
ECH2	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·95	250	3·25	(G_1h) −2·5	($G_{2+4}h$) 100	6·0	Conv. 750	—	1·5
ECH3 **ECH3G**	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·2	★	★	★	★	★	★	—	★
ECH4 **ECH4G**	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·35	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·6	★ *For data and notes refer type* 6J6.	21	A''	A'	H	H	G_1'	G_1''	K	—	—	—	—	**ECC91**
—	—	1·5	★ *For data and notes refer type* 7316.	32	A''	G''	K''	H	H	A'	G'	K'	H_t	—	—	**ECC186**
—	—	1·9	★ *For data and notes refer type* 6ES8.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**ECC189**
—	—	8·6	★ *For data and notes refer type* 6080.	30	G''	A''	K''	G'	A'	K'	H	H	—	—	—	**ECC230**
— —	— —	1·4 0·004	Series Screen Resistor 75,000 Ω Mutual Conductance = 20 μmhos at − 40 volts Grid (G_1^p) Bias.	26	M	H	H	K G_3^p	A^t	G_1^t	G_2^p	A^p	—	G_1^p	—	**ECF1**
—	—	Triode 1·5 Pentode 0·025	★ *For data and notes refer type* 6BL8.	32	A^t	G_1^p	G_2	H	H	A^p	K^p G_3 IS	K^t	G_1^t	—	—	**ECF80**
—	—	Triode 1·8 Pentode 0·01	★ *For data and notes refer type* 6U8.	32	A^t	G_1	G_2	H	H	A^p	K^p G_3 IS	K^t	G_1^t	—	—	**ECF82**
—	—	Pentode 0·012 triode 2·0	★ *For data and notes refer type* 6HG8.	32	K^p G_3 K^t IS	G_1^p	K^p G_3 K^t IS	H	H	G_1^t	A^t	A^p	G_2^p	—	—	**ECF86**
—	—	0·015	Conversion Conductance = 2 μmhos at − 34 volts Grid (G_1^h) Bias. Osc. Plate 100 V. at 9·5 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω.	26	M	H	H	K G_5^h	A^t	G_3^h G_1^t	G_2^h G_4^h	A^h	—	G_1^h	—	**ECH2**
—	—	0·003	★ *For data and notes refer type* ECH33.	26	M	H	H	K	A^t	G_3^h G_1^t	G_2^h G_4^h	A^h	—	G_1^h	—	**ECH3**
				30	M	H	A^h	G_2^h G_4^h	G_1^t	A^t	H	K	—	G_1^h	—	**ECH3G**
—	—	0·002	★ *For data and notes refer type* ECH34.	26	K M G_5^h	H	H	A^t	G_3^h	G_1^t	G_2^h G_4^h	A^h	—	G_1^h	—	**ECH4**
				30	G_3^h	H	A^h	G_2^h G_4^h	G_1^t	A^t	H	G_5^h K M	—	G_1^h	—	**ECH4G**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	μmhos		Megohms
ECH11	TRIODE HEXODE	Frequency Converter	H	6·3	0·2	250	2·2	(G_1h) −2	$(G_{2+4}h)$ See Note	2·8	Conv. 640	—	>1·0
ECH21	TRIODE HEPTODE	Frequency Converter	H	6·3	0·33	★	★	★	★	★	★	—	★
ECH33 ECH33B	TRIODE HEXODE	Frequency Converter	H	6·3	0·2	250	3·0	(G_1h) −2	$(G_{2+4}h)$ See Note	3·0	Conv. 650	—	1·3
ECH34	TRIODE HEPTODE	Frequency Converter	H	6·3	0·35	250	3·0	(G_1h) −2	$(G_{2+4}h)$ 100 See Note	6·2	Conv. 750	—	1·4
ECH35	TRIODE HEXODE	Frequency Converter	H	6·3	0·3	250	3·0	(G_1h) −2	$(G_{2+4}h)$ 100	3·0	Conv. 650	—	1·3
ECH35A	TRIODE HEXODE	Frequency Converter	H	6·3	0·2	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·001	Screen connected to junction of two Resistors in series, R_1 = 35,000 Ω and R_2 = 60,000 Ω, R_1 is connected to B+ and R_2 to B−. Osc. Plate 150 V. at 3·3 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 2800 µmhos. Conversion Conductance = 6·4 µmhos at − 16 volts Grid Bias.	27	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	K M	A^h	H	H	$G_3{}^h$ $G_1{}^t$	A^t	—	—	—	**ECH11**
—	—	0·002	★ *For data and notes refer type* ECH34.	29	H	A^h	A^t	$G_1{}^t$	$G_2{}^h$ $G_4{}^h$	$G_1{}^h$	$G_3{}^h$	H	—	—	K $G_5{}^h$ S	**ECH21**
—	—	0·003	ECH33B fitted with larger top-cap. Screen connected to junction of two Resistors in series, R_1 = 24,000 Ω and R_3 = 33,000 Ω, R_1 is connected to B+ and R_2 to B−. Conversion Conductance = 6·5 µmhos at − 23·5 volts Grid ($G_1{}^h$) Bias. Osc. Plate 100 V. at 3·3 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 2800 µmhos.	30	M	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	H	K	—	$G_1{}^h$	—	**ECH33** **ECH33B**
—	—	0·003	Series Screen Resistor 24,000 Ω (250 V. supply). Conversion Conductance = 7·5 µmhos at − 24·5 volts Grid ($G_1{}^h$) Bias. Osc. Plate 120 V. at 4·5 mA fed from 250 V. through 20,000 Ω. Osc. Grid Current 0·19 mA. Osc. G_m = 550 µmhos.	30	$G_3{}^h$	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	H	$G_7{}^h$ K M	—	$G_1{}^h$	—	**ECH34**
—	—	0·003	Conversion Conductance = 6·5 µmhos at − 17 volts Grid $G_1{}^h$ Bias. Osc. Plate 100 V. at 3·3 mA. Osc. Grid Current 0·2 mA. Osc. Grid Resistor 50,000 Ω. Osc. G_m = 2800 µmhos.	30	M	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**ECH35**
—	—	0·003	★ *For data and notes refer type* ECH33.	30	M	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$	A^t	H	K	—	$G_1{}^h$	—	**ECH35A**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
ECH41	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·225	250	3·0	($G_1{}^h$) −2	($G_{2+4}{}^h$) See Note	2·2	Conv. 500	—	2·0
ECH42	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·23	★	★	★	★	★	★	—	★
ECH80	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·23	★	★	★	★	★	★	—	★
ECH81	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
ECH83	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	★	★
ECL11	**TRIODE POWER OUTPUT TETRODE**	A.F. and Class "A" Power Amplifier	H	6·3	1·0	250	2·0	−2·5	—	—	2000	70	0·035
						250	36·0	−6	250	4·0	9000	—	0·025
ECL80	**TRIODE POWER OUTPUT PENTODE**	A.F., Class "A" Power, Frame Output Amplifier	H	6·3	0·3	★	★	★	★	★	★	★	★
ECL82	**HIGH µ TRIODE POWER PENTODE**	Amplifier	H	6·3	0·78	★	★	★	★	★	★	★	★
ECL83	**HIGH µ TRIODE POWER PENTODE**	Pentode Class "A" A.F. Amplifier	H	6·3	0·6	170	Zero Signal 30	−9·5 See Note	170	Zero Signal 5·0	5500	—	0·053
		Triode Class "A" Amplifier				170	1·6	−1·5	—	—	2100	82	0·04

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	0·1	Screen connected to junction of two resistors in series, R_1 = 33,000 Ω and R_2 = 47,000 Ω, R_1 is connected to B+ and R_2 to B−. Conversion Conductance = 5 μmhos at − 28 volts Grid (G_1^h) Bias. Osc. Plate Current 4·9 mA through 30,000 Ω (250 V. supply). Osc. Grid Resistor 20,000 Ω. Osc. Grid Current 0·35 mA. Osc. G_m = 550 μmhos.	28	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K	H	—	—	—	**ECH41**
—	—	0·1	★ *For data and notes refer type* 6CU7.	28	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K IS	H	—	—	—	**ECH42**
—	—	0·1	★ *For data and notes refer type* 6AN7.	32	G_2^h G_4^h	G_1^h	K G_5^h IS	H	H	IC	A^h	A^t	G_3^h G^t	—	—	**ECH80**
—	—	0·01	★ *For data and notes refer type* 6AJ8.	32	G_2^h G_4^h	G_1^h	IS K G_5^h	H	H	A^h	G_3^h	A_t	G_1^t	—	—	**ECH81**
—	—	Hept. 6·0 Triode 1·0	★ *For data and notes refer type* 6DS8.	32	G_2 G_4	G_1^h	K IS	H	H	A	G_3	A^t	G_1^t	—	—	**ECH83**
— 7000	— 3·8	1·5 0·9	Triode Unit (t). Tetrode Unit (o). Total Harmonic Distortion 10%.	27	A^t	G_1^t	K	A^o	H	H	G_2^o	G_1^o	—	—	—	**ECL11**
★	★	1·0 0·2	★ *For data and notes refer type* 6AB8.	32	A^t	G_1^t	K IS	H	H	A^p	G_3^p	G_2^p	G_1^p	—	—	**ECL80**
★	★	Triode 4·2 Pentode 0·3	★ *For data and notes refer type* 6BM8.	32	G_1^t	K^p G_3 IS	G_1^p	H	H	A^p	G_2^p	K^t	A^t	—	—	**ECL82**
5500	2·2	< 0·2	Cathode Resistor 270 Ω. Total Harmonic Distortion 10%.	32	A^t	G^t	K^t	H	H	A^p	K^p G_3	G_2	G_1	—	—	**ECL83**
—	—	1·6	R.C. Amplifier (170 volt supply). Plate Resistor 0·1 MΩ. Cathode Resistor 1800 Ω. Following Grid Resistor 0·33 MΩ. Voltage Gain 49.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
ECL84	**HIGH µ TRIODE POWER PENTODE**	Pentode Video Amplifier Triode Sync. Separator	H	6·3	0·72	★	★	★	★	★	★	★	—
ECL85	**HIGH µ TRIODE POWER PENTODE**	Vertical Deflection Oscillator Amplifier	H	6·3	0·9	★	★	★	★	★	★	★	★
ECL86	**HIGH µ TRIODE POWER PENTODE**	Audio Amplifier	H	6·3	0·7	★	★	★	★	★	★	★	★
EDD11	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	H	6·3	0·4	250	Zero Signal 2 x 3·5 Max. Signal 2 x 17·5	−6·3	—	—	—	—	—
EEP1	**SECONDARY EMISSION TETRODE**	Wide-band Amplifier	H	6·3	0·6	250	8·0	−2·5	150	0·45	17,000	—	0·05
EF2	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·4	250	4·5	−2	100	1·4	2800	—	1·4
EF5	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	8·0	−3	100	2·6	1700	—	1·2
EF6	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF8	**LOW-NOISE REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier (Low Noise)	H	5·3	0·2	★	★	★	★	★	★	—	★
EF9	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF11	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	5·7	−2	100 See Note	2·0	2200	—	2·0

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	—	Pentode < 0·1 Triode 2·7	★ *For data and notes refer type* 6DX8.	32	G^t	A^t	K^t	H	H	A^p	K^p G_3 IS	$G_1{}^p$	$G_2{}^p$	—	—	**ECL84**
—	—	—	★ *For data and notes refer type* 6GV8.	32	A^t	G^t	K^t	H	H	A^p	G_2	K^p G_3 IS	$G_1{}^p$	—	—	**ECL85**
★	★	—	★ *For data and notes refer type* 6GW8.	32	G^t	K^t	G_2	H	H	A^p	K^p G_3 IS	$G_1{}^p$	A^t	—	—	**ECL86**
Plate to Plate 16,000	5·5	—	Driver Transformer Step-down ratio 3 : (1 + 1).	27	A'	$G_1{}'$	K M	NC	H	H	$G_1{}''$	A''	—	—	—	**EDD11**
—	—	0·006	Auxiliary Cathode (K'') voltage 150 V. at − 6·5 mA.	26	M	H	H	K' S	K''	NC	G_2	A	—	G_1	—	**EEP1**
—	—	0·003	Mutual Conductance = 2 µmhos at − 22 volts Grid Bias.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**EF2**
—	—	0·003	Mutual Conductance = 2 µmhos at − 46·5 volts Grid Bias.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**EF5**
—	—	0·003	★ *For data and notes refer type* EF36.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**EF6**
—	—	0·007	★ *For data and notes refer type* EF38.	26	M	H	H	K	G_4	G_2	G_3	A	—	G_1	—	**EF8**
—	—	0·002	★ *For data and notes refer type* EF39.	26	M	H	H	K	G_3	NC	G_2	A	—	G_1	—	**EF9**
—	—	0·002	Series Screen Resistor 75,000 Ω (250 V. supply). Mutual Conductance = 22 µmhos at − 45 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·6 meg. Cathode Resistor 1500 Ω. Gain = 98.	27	G_2	G_1	K G_3 M	NC	H	H	NC	A	—	—	—	**EF11**

TYPE No	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EF12	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	250	3·0	−2	100	1·0	2100	—	2·0
EF13	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier (Low Noise)	H	6·3	0·2	250	4·5	−2	100	0·6	2300	—	0·5
EF22	**MEDIUM CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	250	6·0	−2·5	100	1·7	2200	—	1·2
EF36	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF37	**SHARP CUT-OFF PENTODE**	A.F. Amplifier (Non-Microphonic)	H	6·3	0·2	★	★	★	★	★	★	—	★
EF37A	**SHARP CUT-OFF PENTODE**	A.F. Amplifier (Non-Microphonic, Low Hum)	H	6·3	0·2	250 200 100	3·0 3·0 3·0	−2 −2 −2	100 100 100	0·8 0·8 0·8	1800 1800 1800	— — —	2·5 2·0 1·0
EF38	**LOW-NOISE REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier (Low Noise)	H	6·3	0·2	250	8·0	−2·5	(G_2) 250	0·2	1800	—	0·45
EF39	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	6·0	−2·5 See Note	100 See Note	1·7	2200	—	1·25

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	0·002	Plate Current Cut-off at − 5 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·5 meg. Cathode Resistor 1600 Ω. Gain = 181.	27	G_2	G_1	K G_3 M	NC	H	H	NC	A	—	—	—	**EF12**
—	—	0·005	Grid No. 3 tied to Cathode. Mutual Conductance = 23 µmhos at − 17 volts Grid Bias.	27	G_2	G_1	K M	NC	H	H	G_3	A	—	—	—	**EF13**
—	—	0·002	Mutual Conductance = 22 µmhos at − 19 volts Grid Bias. As R.C. Amplifier (250 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·8 meg. Cathode Resistor 1750 Ω. Gain = 106.	29	H	A	G_2	G_3 S	NC	G_1	K	H	—	—	—	**EF22**
—	—	0·003	★ *For data and notes refer type* EF37A.	30	M	H	A	G_2	G_3	NC	H	K	—	G_1	—	**EF36**
— — —	— — —	0·02	★ *For data and notes refer type* EF37A.	30	M	H	A	G_2	G_3	—	H	K	—	G_1	—	**EF37**
— — —	— — —	0·02	Plate Current Cut-off at − 4·5 volts Grid Bias. As R.C. Amplifier (300 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·3 meg. Screen Resistor 0·8 meg. Cathode Resistor 4000 Ω. Gain = 175.	30	M	H	A	G_2	G_3	—	H	K	—	G_1	—	**EF37A**
—	—	0·007	Grid Nos. 2 and 4 tied to Cathode. Mutual Conductance = 18 µmhos at − 34 volts Grid Bias. Equivalent Noise Resistance = 3200 Ω.	30	M G_2	H	A	G_3	G_4	NC	H	K	—	G_1	—	**EF38**
—	—	0·003	Cathode Bias Resistor 325 Ω. Series Screen Resistor 90,000 Ω (250 V. supply). Mutual Conductance = 4·5 µmhos at − 49 volts Grid Bias.	30	M	H	A	G_2	G_3	NC	H	K	—	G_1	—	**EF39**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EF40	**SHARP CUT-OFF PENTODE**	A.F. Amplifier	H	6·3	0·2	250	3·0	−2	140	0·55	1850	—	2·5
EF41	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF42	**SHARP CUT-OFF R.F. PENTODE**	Wide-band Amplifier	H	6·3	0·33	250	10·0	−2	250	2·3	9500	—	0·5
EF43	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·33	250	15·0	−2	135 See Note	3·5	6400	—	0·5
EF50	**REMOTE CUT-OFF R.F. PENTODE**	Wide-band Amplifier	H	6·3	0·3	250	10·0	(G_1) −2	250	3·0	6500	—	1·0
EF51	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·35	250	14·0	−2	250	2·6	9500	—	0·5
EF54	**SHARP CUT-OFF R.F. PENTODE**	U.H.F. Amplifier	H	6·3	0·3	250	10·0	−1·7	250	1·45	7700	—	0·5
EF55	**SHARP CUT-OFF PENTODE**	Video Amplifier	H	6·3	1·0	250	40	−4·5	250	5·5	12,000	—	0·055
EF70	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	100	3·0	−2	100	3·0	2300	—	0·1
EF72	**R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	100	7·0	−1·4	100	2·2	5000	—	0·3
EF73	**REMOTE CUT-OFF PENTODE**	A.F. Amplifier	H	6·3	0·2	100	7·5	−2	100	2·5	5000	—	0·25

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·04	Plate Current Cut-off at — 5 volts Grid Bias. As R.C. Amplifier (250 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·22 meg. Screen Resistor 1·0 meg. Cathode Resistor 1500 Ω. Gain = 180.	28	H	A	IC	G_3	G_1	G_2	K IS	H	—	—	—	**EF40**
—	—	0·002	★ *For data and notes refer type* type CCJ5.	28	H	A	IC	IC	G_2	G_1	K G_3 IS	H	—	—	—	**EF41**
—	—	0·005	Plate Current Cut-off at — 4·5 volts Grid Bias.	28	H	A	IS	G_3	G_2	G_1	K	H	—	—	—	**EF42**
—	—	0·006	Series Screen Resistor 33,000 Ω (250 V. supply). Mutual Conductance = 64 µmhos at — 28 volts Grid Bias.	28	H	A	IS	G_3	G_2	G_1	K	H	—	—	—	**EF43**
—	—	0·007	Grid No. 3 Bias = 0. Gain Control by means of Grid No. 3. Mutual Conductance = 45 µmhos at — 54 volts Grid (G_3) Bias.	33	H	G_2	A	G_3	IS	K	G_1	S	H	—	M	**EF50**
—	—	0·007	Mutual Conductance = 100 µmhos at — 8 volts Grid Bias.	29	H	A	K	G_3 IS	G_2	G_1	K	H	—	—	—	**EF51**
—	—	0·02	Plate Current Cut-off at — 6 volts Grid Bias.	33	H	A	G_2	K G_2 IS	K G_3 IS	G_1	K G_3 IS	K G_3 IS	H	—	—	**EF54**
—	—	0·15	Plate Current Cut-off at — 10 volts Grid Bias.	33	H	G_2	A	G_3	IS	K	G_1	IS	H	—	—	**EF55**
—	—	0·02	Plate Current = 0·1 mA at — 8 volts Grid (G_1) Bias. Plate Current = 0·1 mA at — 8 volts Grid (G_3) Bias.	31	G_1	G_3	H	K	A	H	G_2	G_3	—	—	—	**EF70**
—	—	0·04		31	G_1	K G_3	H	K G_3	A	H	G_2	K G_3	—	—	—	**EF72**
—	—	0·5	Plate Current = 0·1 mA at — 50 volts Grid Bias.	31	G_1	G_3	H	A	G_2	H	K	A	—	—	—	**EF73**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
EF80	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF81	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EF83	**REMOTE CUT-OFF A.F. PENTODE**	Class "A" Amplifier	H	6·3	0·2	200	4·0	−1·6	See Note 50	1·15	1600	—	1·6
EF85	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF86	**SHARP CUT-OFF A.F. PENTODE**	A.F. Amplifier (Low-noise)	H	6·3	0·2	★	★	★	★	★	★	—	★
EF89	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	250	9·0	−2†	100*	3·0	3600	—	1·0
EF91	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF92	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	—
EF93	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF94	**SHARP CUT-OFF PENTODE**	R.F. and Amplifier A.F.	H	6·3	0·3	★	★	★	★	★	★	—	★
EF95	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·175	★	★	★	★	★	★	—	★
EF97	**R.F. PENTODE WITH VARIABLE MUTUAL CONDUCTANCE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·007	★ *For data and notes refer type* 6BX6.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**EF80**
—	—	0·002	★ *For data and notes refer type* 6BH5.	32	G_2	G_1	K G_3 IS	H	H	A	IC	IC	NC	—	—	**EF81**
—	—	0·05	Plate Resistor 0·1 mΩ. Series Screen Resistor 0·39 mΩ. Following Grid Resistor 1·0 mΩ. Gain 85.	32	G_2	IS	K	H	H	A	IS	G_3	G_1	—	—	**EF83**
—	—	0·005	★ *For data and notes refer type* 6BY7.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**EF85**
—	—	0·025	★ *For data and notes refer type* 3BK8.	32	G_2	IS	K	H	H	A	IS	G_3	G_1	—	—	**EF86**
—	—	0·002	Mutual Conductance = 36 µmhos at − 40 volts grid (G_1) bias. * Series screen resistor 50000Ω (250 volts supply). † Cathode bias resistor 165 Ω.	32	S	G_1	K	H	H	S	A	G_2	G_3	—	—	**EF89**
—	—	0·008	★ *For data and notes refer type* 6AM6.	21	G_1	K	H	H	A	G_3 IS	G_2	—	—	—	—	**EF91**
—	—	0·004	★ *For data and notes refer type* 6CQ6.	21	G_1	K	H	H	A	G_3 IS	G_2	—	—	—	—	**EF92**
—	—	0·0035	★ *For data and notes refer type* 6BA6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**EF93**
—	—	0·0035	★ *For data and notes refer type* 6AU6.	21	G_1	G_3 IS	H	H	A	G_2	K	—	—	—	—	**EF94**
—	—	0·02	★ *For data and notes refer type* 6AK5.	21	G_1	K IS G_3	H	H	A	G_2	K IS G_3	—	—	—	—	**EF95**
—	—	0·02	★ *For data and notes refer type* 6ES6.	21	G_1	K	H	H	A	G_2	G_3	—	—	—	—	**EF97**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EF98	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF183	**SEMI-REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	☆	—	☆
EF184	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
EF730	**SUBMINIATURE DUAL CONTROL R.F. PENTODE**	Class "A" Amplifier	H	6·3	0·15	100	5·3	—1·4	100	4·1	See Note	—	0·11
EF731	**SUBMINIATURE SEMI-REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	100	7·2	—1·1	100	2·2	4500	—	0·26
EF732	**SUBMINIATURE R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	100	7·5	—1·5	100	2·4	5000	—	0·26
EF734	**SUBMINIATURE R.F. PENTODE**	R.F. Amplifier	H	6·3	0·15	100	7·5	—1·5	100	2·4	5000	—	0·26
EFF50	**SHARP CUT-OFF R.F. PENTODE**	Push-pull R.F. Amplifier	H	6·3	0·58	300	10·0	—2	225	1·5	10,000	—	0·25
EFF51	**TWIN SHARP CUT-OFF R.F. PENTODE**	Push-pull R.F. Amplifier	H	6·3	0·75	300	10·0	—2	225	1·8	9000	—	0·25
EFM1	**MEDIUM CUT-OFF PENTODE and TUNING INDICATOR**	A.F. Amplifier and Tuning Indicator	H	6·3	0·2	Supply 250	0·8	(G_1P) —2	40	0·6	—	—	0·8

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·02	★ *For data and notes refer type* 6ET6.	21	G_1	K	H	H	A	G_2	G_3	—	—	—	—	**EF98**
—	—	0·005 max.	★ *For data and notes refer type* 6EH7.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**EF183**
—	—	0·005 max.	★ *For data and notes refer type* 6EJ7.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**EF184**
—	—	Grid No. 1 to Plate $< 0{\cdot}034$	Mutual conductances :— Grid No. 1 to plate 3200 μmhos. Grid No. 3 to plate 500 μmhos. For Plate Current = 10 μA. :— Grid No. 1 Voltage = —7·5. Grid No. 3 Voltage = —8.	31	G_1	K	H	G_3	A	H	G_2	K	—	—	—	**EF730**
—	—	$< 0{\cdot}03$		31	G_1	K G_3	H	K G_3	A	H	G_2	K G_3	—	—	—	**EF731**
—	—	$< 0{\cdot}03$	Plate Current = 10 μA. at —9·0 volts grid bias.	31	G_1	K G_3	H	K G_3	A	H	G_2	K G_3	—	—	—	**EF732**
—	—	$< 0{\cdot}03$	Plate Current = 10 μA. at —9·0 volts grid bias.	31	G_1	K IS	H	G_3	A	H	G_2	K IS	—	—	—	**EF734**
—	—	0·04	Values are for each unit. Frequency limit 500 Mc/s. Equivalent Noise Resistance 600Ω	33	H	A'	$G_2{}'$	$G_1{}'$	K' K'' $G_3{}'$ $G_3{}''$	$G_1{}''$	$G_2{}''$	A''	H	—	—	**EFF50**
—	—	0·04	Plate Current Cut-off at — 4·5 volts Grid Bias. Values are for each unit. Frequency limit 500 Mc/s. Equiv. Noise Resistance 750 Ω.	33	H	A'	$G_2{}'$	$G_1{}'$	K' K'' $G_3{}'$ $G_3{}''$	$G_1{}''$	$G_2{}''$	A''	H	—	—	**EFF51**
—	—	—	As R.C. Amplifier (250 V. supply). Plate Resistor 0·13 meg. Screen Resistor 0·35 meg. Cathode Resistor 980 Ω. Tuning Indicator Screen 250 V. at 0·65 mA. Gain = 60. Shadow angle of a single sector > 70° measured at edge of screen with — 2 volts Grid ($G_1{}^p$) Bias and < 5° with — 20 volts Grid ($G_1{}^p$) Bias.	26	M	H	H	K $G_3{}^p$ $G_1{}^i$	T	$G_1{}^p$	$G_2{}^p$ DE	A^p	—	—	—	**EFM1**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
EFM11	**MEDIUM CUT-OFF PENTODE and TUNING INDICATOR**	A.F. Amplifier and Tuning Indicator	H	6·3	0·2	Supply 250	1·0	(G_1P) −1·5	30	0·63	—	—	0·7
EFP60	**SECONDARY EMISSION SHARP CUT-OFF PENTODE**	Wide-band Amplifier	H	6·3	0·37	250	20	−2	250	1·5	25,000	—	0·07
EH90	**PENTAGRID**	Sync. Separator Limiter	H	6·3	0·3	★	★	★	★	★	★	—	★
EK1	**OCTODE**	Frequency Converter	H	6·3	0·4	250	1·6	(G_4) −1·5	(G_{3+5}) 70	2·8	Conv. 600	—	1·5
EK2 **EK2G**	**OCTODE**	Frequency Converter	H	6·3	0·2	★	★	★	★	★	★	—	★
EK3	**BEAM OCTODE**	Frequency Converter	H	6·3	0·6	250	2·5	(G_4) −2·5	(G_{3+5}) 100	5·5	Conv. 650	—	2·0
EK32	**OCTODE**	Frequency Converter	H	6·3	0·2	250	1·0	(G_4) −2	(G_{3+5}) 50	0·8	Conv. 550	—	2·0
EK90	**PENTAGRID**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
EL1	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·4	250	32	−18·5	250	4·5	2600	—	0·048
EL2	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	As R.C. Amplifier (250 V. supply). Plate Resistor 0·13 meg. Screen Resistor 0·35 meg. Cathode Resistor 650 Ω. Tuning Indicator Screen 250 V. at 0·65 mA. Gain = 80. Shadow angle of a single sector 70° measured at edge of screen with − 1·5 volts Grid ($G_1{}^p$) Bias and 3° with − 20 volts Grid ($G_1{}^p$) Bias.	27	A^p	$G_1{}^h$	K $G_3{}^p$ $G_1{}^l$	T	H	H	NC	$G_2{}^p$ DE	—	—	—	**EFM11**
—	—	0·004	Auxiliary Cathode (K'') voltage 150 V. at − 15·6 mA. Plate Current Cut-off at − 4 volts Grid Bias.	33	H	K'	G_1	K'	K''	A	G_3 IS	G_2	H	—	—	**EFP60**
—	—	0·07	★ *For data and notes refer type* 6CS6.	21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**EH90**
—	—	—	Grid No. 2 70 V. at 2·0 mA. Osc. Grid (G_1) Current 0·19 mA. Osc. Grid Resistor 50,000 Ω.	26	M	H	H	K G_6	G_2	G_1	G_3 G_5	A	—	G_4	—	**EK1**
—	—	0·07	★ *For data and notes refer type* EK32.	26	M	H	H	K G_6	G_2	G_1	G_3 G_5	A	—	G_4	—	**EK2**
				30	M	H	A	G_3 G_5	G_1	G_2	H	G_6 K	—	G_4	—	**EK2G**
—	—	0·07	Conversion Conductance = 6·5 μmhos at − 38 volts Grid (G_4) Bias. Grid No. 2 100 V. at 5·0 mA. Osc. Grid (G_1) Current 0·3 mA. Osc. Grid Resistor 50,000 Ω. Cathode Resistor 190 Ω.	26	M	H	H	K G_6	G_2	G_1	G_3 G_5	A	—	G_1	—	**EK3**
—	—	0·07	Conversion Conductance = 2 μmhos at − 25 volts Grid (G_4) Bias. Grid No. 2 200 V. at 2·5 mA. Osc. Grid (G_1) Current 0·3 mA maximum. Osc. Grid Resistor 50,000 Ω. Cathode Resistor 500 Ω.	30	M	H	A	G_3 G_5	G_1	G_2	H	K G_6	—	G_4	—	**EK32**
—	—	0·3	★ *For data and notes refer type* 6BE6.	21	G_1	K G_5	H	H	A	G_2 G_4	G_3	—	—	—	—	**EK90**
7000	See Note	1·1	Power output = 2·8 W. at 10% Total Harmonic Distortion or 1·4 W. at 5% Total Harmonic Distortion.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**EL1**
★	★	0·6	★ *For data and notes refer type* EL32.	26	NC	H	H	K G_3	NC	NC	G_2	A	—	G_1	—	**EL2**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EL3N **EL3NG**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·9	★	★	★	★	★	★	—	★
EL5 **EL5G**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·3	250	72	−14	275	7·0	8500	—	0·022
EL6	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·2	250	72	−7	250	8·0	14,500	—	0·02
EL11 **EL11N**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·9	250	36	−6	250	4·0	9000	—	0·05
EL12	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·2	250	72	−7	250	8·0	15,000	—	0·025
EL22	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·7	250	44	−7	250	5·2	9500	—	—
EL31	**POWER OUTPUT PENTODE**	Class "AB" Power Amplifier	H	6·3	1·4	800	Zero Signal 2 x 30 Max. Signal 2 x 107	−26	400	Zero Signal 2 x 3·1 Max. Signal 2 x 28·5	—	—	—
EL32	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	250	32	−18	250	5·0	2800	—	0·07
EL33 **EL33A** **EL33B**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·9	250	36	−6	250	4·0	9000	—	0·05
		Class "AB" Power Amplifier (two Valves)				250	Zero Signal 2 x 24 Max. Signal 2 x 28·5	See Note	250	Zero Signal 2 x 2·8 Max. Signal 2 x 4·6	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	0·8	★ *For data and notes refer type* EL33.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**EL3N**
				30	NC	H	A	G_2	G_1	—	H	K G_3 M	—	—	—	**EL3NG**
3500	8·8	0·8	Cathode Resistor for Self-bias 175 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**EL5**
				30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL5G**
3500	8·0	0·7	Cathode Resistor for Self-bias 90 Ω. Total Harmonic Distortion 10%.	26	NC	H	H	K G_3 M	NC	G_1	G_2	A	—	—	—	**EL6**
7000	4·5	0·8	Cathode Resistor for Self-bias 150 Ω. Total Harmonic Distortion 10%.	27	G_2	G_1	K G_3	NC	H	H	NC	A	—	—	—	**EL11**
					G_2	G_1	K G_3 M	NC	H	H	NC	A	—	—	—	**EL11N**
3500	8·0	0·7	Cathode Resistor for Self bias 90 Ω. Total Harmonic Distortion 10%.	27	G_2	G_1	K M G_3	NC	H	H	NC	A	—	—	—	**EL12**
5750	5·2	1·0	Cathode Resistor for Self-bias 140 Ω. Total Harmonic Distortion 10%.	29	H	A	G_2	NC	NC	G_1	K G_3	H	—	—	—	**EL22**
Plate to Plate 10,000	120	1·2	R.M.S. A.F. Grid to Grid volts = 36. Total Harmonic Distortion = 5%.	30	G_3	H	NC	G_2	G_1	—	H	K	—	A	—	**EL31**
8000	3·6	—	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	NC	—	H	K G_3	—	G_1	—	**EL32**
7000	4·5	1·0	Cathode Resistor for Self-bias 150 Ω. Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL33**
					NC	H	A	G_2	G_1	—	H	K M G_3	—	—	—	**EL33A**
Plate to Plate 10,000	8·2		Cathode Bias Resistor 140 Ω. Total Harmonic Distortion 3·1%.		M	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL33B**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EL34	**POWER OUTPUT PENTODE**	Power Amplifier	H	6·3	1·5	★	★	★	★	★	★	—	★
		Class "A" Power Amplifier				250	72	−15·5	250	8·0	5000	—	0·0155
EL35	**POWER OUTPUT PENTODE**	Class "AB" Power Amplifier (two Valves Self-bias)	H	6·3	1·3	360	Zero Signal 2 x 44 Max. Signal 2 x 53	See Note	270	Zero Signal 8·5 Max. Signal 17·5	—	—	—
		Class "AB" Power Amplifier (two Valves fixed bias)				360	Zero Signal 2 x 44 Max. Signal 2 x 70	−26	270	Zero Signal 8·5 Max. Signal 19·5	—	—	—
EL36	**POWER PENTODE**	Horizontal Deflection Amplifier	H	6·3	1·25	★	★	★	★	★	★	—	★
EL37	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·4	250	100	−13·5	250	13·5	11,000	—	0·0135
EL38	**POWER OUTPUT PENTODE**	Horizontal Deflection Amplifier	H	6·3	1·4	★	★	★	★	★	★	—	★
EL41	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·71	★	★	★	★	★	★	—	★
EL42	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	225	26	See Note	225	4·1	3200	—	0·09
EL50	**POWER OUTPUT PENTODE**	Class "B" Power Amplifier (two Valves)	H	6·3	1·35	775 See Note	Zero Signal 2 x 15 Max. Signal 2 x 70	−40	See Note	Zero Signal 2 x 1·0 Max. Signal 2 x 24	—	—	—
EL51	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	1·9	750	60	−37·5	750	10·0	8000	—	0·05
						500	87	−20·0	500	13·0	11,000	—	0·033
EL60	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier Class "AB" Power Amplifier	H	6·3	1·35	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No
☆	★	1·0	★ *For data and notes refer type* 6CA7.	30	G_3	H	A	G_2	G_1	NC	H	K	—	—	—	**EL34**
2500	6·0		Total Harmonic Distortion 10%. Cathode Resistor for Self-bias 180 Ω.													
Plate to Plate 7000	21·0	1·0	Total Harmonic Distortion 3%. Cathode Bias Resistor 250 Ω.	30	—	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL35**
Plate to Plate 6250	26·0		Total Harmonic Distortion 3%.													
—	—	1·1	★ *For data and notes refer type* 6CM5.	30	IC	H	IC	G_2	G_1	—	H	K G_3	—	A	—	**EL36**
2500	10·5	1·0	Total Harmonic Distortion 10%. Cathode Resistor for Self-bias 120 Ω.	30	—	H	A	G_2	G_1	—	H	K G_3	—	—	—	**EL37**
—	—	1·2	★ *For data and notes refer type* 6CN6.	30	G_3	H	NC	G_2	G_1	—	H	K	—	A	—	**EL38**
★	★	1·0	★ *For data and notes refer type* 6CK5.	28	H	A	IC	NC	G_2	G_1	K G_3	H	—	—	—	**EL41**
9000	2·8	0·2	Total Harmonic Distortion 12%. Cathode Bias Resistor 360 Ω.	28	H	A	IC	NC	G_2	G_1	K G_3	H	—	—	—	**EL42**
Plate to Plate 18,000	80	0·8	Plate supply voltage = 800 V. Series Screen Resistor 500 Ω. (400 V. supply). Total Harmonic Distortion 10%. R.M.S. Grid to Grid volts = 28.	26	NC	H	H	K M	G_3	G_1	G_2	NC	—	A	—	**EL50**
— —	— —	1·5		26	NC	H	H	K G_3	NC	G_1	G_2	NC	—	A	—	**EL51**
★	★	1·1	★ *For data and notes refer type* EL34.	33	H	G_3	A	NC	NC	G_2	G_1	K	H	—	—	**EL60**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
EL70	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·45	100	31	−9	100	2·2	5000	—	0·015
EL71	**SUBMINIATURE POWER PENTODE**	Class "A" Amplifier	H	6·3	0·45	100	30	−8·3	100	1·2	4200	—	0·15
		Audio Power Amplifier				110	30	See Note	110	1·2	—	—	—
EL80	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier Class "AB_1" Power Amplifier	H	6·3	0·71	★	★	★	★	★	★	—	★
EL81	**LINE OUTPUT PENTODE**	Line Output Amplifier and Class "B" Power Amplifier	H	6·3	1·05	★	★	★	★	★	★	—	—
EL82	**POWER PENTODE**	Class "A" Amplifier	H	6·3	0·8	200	45	−13·9	See Note	8·5	7600	—	0·024
		Class "A" Push Pull Amplifier				200	Zero Signal 2 × 45 Max. Signal 2 × 52	See Note	200	Zero Signal 2 × 8·5 Max. Signal 2 × 19·0	—	—	—
EL83	**PENTODE**	Video Amplifier	H	6·3	0·71	★	★	★	★	★	★	—	★
EL84	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·76	★	★	★	★	★	★	—	★
EL85	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·76	★	★	★	★	★	★	—	★
EL86	**POWER PENTODE**	Single Ended Push Pull Amplifier	H	6·3	0·76	★	★	★	★	★	★	—	★
EL90	**BEAM POWER OUTPUT TETRODE**	Power Amplifier	H	6·3	0·45	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
3000	1·25	—		31	G_1	K	H	G_3	A	H	G_2	G_3	—	—	—	**EL70**
— 3000	— 1·0	< 0·2	 Cathode Resistor 270 Ω. Total Harmonic Distortion 10%.	31	G_1	K G_3	H	K G_3	A	H	G_2	K G_3	—	—	—	**EL71**
★	★	1·0	★ *For data and notes refer type* 6M5.	32	G_2	G_1	K G_3	H	H	IC	A	IC	NC	—	—	**EL80**
—	—	—	★ *For data and notes refer type* 6CJ6	32	IC	G_1	K	H	H	IC	IC	G_2	G_3	A	—	**EL81**
4000 Plate to plate 4000	4·2 12·0	1·0	Series Screen Resistor 680 Ω. Total Harmonic Distortion 10%. Cathode Resistor 135 Ω. Total Harmonic Distortion 5%. Maximum R.M.S. Input Voltage 2 × 13·5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_1	—	—	**EL82**
—	—	0·1	★ *For data and notes refer type* 6CK6.	32	G_2	G_1	K	H	H	G_3	A	IS	NC	—	—	**EL83**
★	★	0·5	★ *For data and notes refer type* 6BQ5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**EL84**
★	★	0·2	★ *For data and notes refer type* 6BN5.	32	G_1	G_1	K	H	H	G_3	A	G_3	G_2	—	—	**EL85**
★	★	0·6	★ *For data and notes refer type* 6CW5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**EL86**
★	★	0·35	★ *For data and notes refer type* 6AQ5.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**EL90**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EL91	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
EL95	**POWER PENTODE**	Audio Power Amplifier	H	6·3	0·2	★	★	★	★	★	★	—	★
ELL80	**TWIN POWER PENTODE**	Class "A" Power Amplifier (per unit)	H	6·3	0·55	250	24	—9·0	250	4·5	6000	—	0·08
		Class "AB_1" Power Amplifier				250	Zero-Signal 2 × 21 Max.-Signal 2×26	See Note	250	Zero-Signal 2×4·2 Max.-Signal 2×8·0	—	—	—
EM1	**TUNING INDICATOR with TRIODE**	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 0·13	0 for Shadow Angle 74°	—	—	—	—	—
EM2	**TUNING INDICATOR with TRIODE**	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 0·15	0 for Max. Shadow Angle	—	—	—	—	—
EM3	**TUNING INDICATOR with TRIODE**	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 0·3	0 for Max. Shadow Angle	—	—	—	—	—
EM4	**TUNING INDICATOR with TRIODES**	Tuning Indicator	H	6·3	0·2	★	★	★	—	—	—	—	—
EM34	**TUNING INDICATOR with TRIODES**	Tuning Indicator	H	6·3	0·2	Target Volts 250	Target Current 2·0	0 for Shadow Angle of 90° in each case	—	—	—	—	—
EM80	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 2·0	−1 for shadow angle of 5°	—	—	—	—	—
EM81	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	★	★	★	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	0·5	★ *For data and notes refer type* 6AM5.	21	G_1	K G_3	H	H	A	NC	G_2	—	—	—	—	**EL91**
★	★	0·4	★ *For data and notes refer type* 6DL5.	21	G_1	K G_3	H	H	A	G_2	G_1	—	—	—	—	**EL95**
10,000	3	0·2 max.		32	G'_2	G'_1	A'	H	H	G''_1	K G_3 IS	A''	G''_2	—	—	**ELL80**
10,000 Plate to Plate	8·5		Cathode Resistor 180 Ω. Total Harmonic Distortion 5%. R.M.S. Grid to Grid Input Voltage = 2 × 8·0 volts.													
—	—	—	Triode Plate Resistor 2·0 meg. Triode Plate Current 0·095 mA. Shadow Angle 0° for − 5 volts Grid (G_1^t) Bias.	26	NC	H	H	K	NC	G_1^t	T	A^t DE	—	—	—	**EM1**
—	—	—	Triode Plate Resistor 2·0 meg. Triode Plate Current 0·1 mA. Min. Shadow Angle at − 6 volts Grid (G_1^t) Bias.	26	NC	H	H	K	G_1^i	G_1^t	T	A^t DE	—	—	—	**EM2**
—	—	—	Triode Plate Resistor 1·0 meg. Triode Plate Current 0·2 mA. Min. Shadow Angle at − 21 volts Grid (G_1^t) Bias.	26	NC	H	H	K G_1^i	NC	G_1^t	T	A^t DE	—	—	—	**EM3**
—	—	—	★ *For data and notes refer type* EM34.	26	NC	H	H	K G_1^i	A' DE'	G_1^t	T	A'' DE''	—	—	—	**EM4**
—	—	—	Dual sensitivity type. Triode Plate Resistor 1·0 meg for each plate lead. Min. Shadow Angles occur at − 5 volts and − 16 volts Grid (G_1^t) Bias, respectively.	30	NC	H	A' DE'	G_1^t	T	A'' DE''	H	K G_1^i	—	—	—	**EM34**
—	—	—	Triode plate resistor 0·5 meg. Shadow angle of 50° occurs at − 16 volts grid (G_1^t) bias.	32	G_1^t	K G_1^i	IC	H	H	IC	A^t DE	IC	T	—	—	**EM80**
—	—	—	★ *For data and notes refer type* 6DA5.	32	G_1^t	K G_1^i	IC	H	H	IC	A^t DE	IC	T	—	—	**EM81**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance μmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
EM84	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·21	★	★	★	—	—	—	—	—
EM85	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 200	Target Current 1·4	0 for Shadow angle of 100°	—	—	—	—	—
EN31	**GAS-FILLED TRIODE**	Relaxation Oscillator	H	6·3	1·3	1000 Peak Max.	10 Max.	—	—	—	—	—	—
		Half-wave Rectifier				350 Max.	D.C. Output 40 Max.	—	—	—	—	—	—
EQ40	**ENNEODE**	F.M. Detector and Limiter	H	6·3	0·2	★	★	★	★	★	—	—	★
EQ80	**ENNEODE**	F.M. Detector and Limiter	H	6·3	0·2	★	★	★	★	★	—	—	★
EY51	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	6·3	0·09	★	★	—	—	—	—	—	—
EY70	**HALF-WAVE RECTIFIER**	Half-wave Rectifier	H	6·3	0·45	Max. R.M.S. 300	D.C. Output 45 Max.	—	—	—	—	—	—
EY80	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	0·9	★	★	—	—	—	—	—	—
EY81	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	0·81	★	★	—	—	—	—	—	—
EY82	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	6·3	0·9	★	★	—	—	—	—	—	—
EY84	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	6·3	1·0	★	★	—	—	—	—	—	—
EY86	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	6·3	0·09	★	★	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* 6FG6.	32	G^t	IC	K G^i	H	H	T	DE	IC	A^t	—	—	**EM84**
—	—	—	Plate Resistor 0·47 mΩ. (250 V. supply). Grid bias −14 volts for shadow angle = 0°.	32	G_1^t	IC	K G_1^i	H	H	T	DE	IC	A^t	—	—	**EM85**
—	—	2·3	Valve voltage drop 33 V. Grid Resistor not less than 750 Ω per max. instantaneous unit voltage applied to the Grid. Frequency limit 150 Kc/s.	30	NC	H	NC	—	G_1	—	H	K	—	A	—	**EN31**
—	—		Grid connected to Cathode Condenser Input to Filter 6 μF maximum. Plate Supply Impedance = 100 Ω minimum.													
—	—	—	★ *For data and notes refer type* 6BE7.	28	H	A	G_2 G_4 G_6	G_5	G_1	G_3	G_7 K	H	—	—	—	**EQ40**
—	—	—	★ *For data and notes refer type* 6BE7.	32	G_2 G_4 G_6	G_3	K G_7	H	H	A	G_1	K G_7	G_5	—	—	**EQ80**
—	—	—	★ *For data and notes refer type* 6X2.	3	H K	H	A	—	—	—	—	—	—	—	—	**EY51**
—	—	—		31	NC	A	H	A	K	H	NC	A	—	—	—	**EY70**
—	—	—	★ *For data and notes refer type* 19X3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**EY80**
—	—	—	★ *For data and notes refer type* 6R3.	32	IC	IC	IC	H	H	IC	IC	IC	A	K	—	**EY81**
—	—	—	★ *For data and notes refer type* 6N3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**EY82**
—	—	—	★ *For data and notes refer type* 6374.	32	IC	IC	K	H	H	IC	IC	IC	IC	A	—	**EY84**
—	—	—	★ *For data and notes refer type* 6S2.	32	H K IS	H	IC	H K IS	H	H K IS	IC	H	H K IS	A	—	**EY86**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
EY87	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	H	6·3	0·09	★	★	—	—	—	—	—	—
EY88	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·55	Supply Voltage 250 (max.) Peak Inverse 7500 (Absol. max.)	Peak 550 (max.) Average 220 (max.)	—	—	—	—	—	—
EY91	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	6·3	0·42	Max. R.M.S. 250	D.C. Output 75 Max.	—	—	—	—	—	—
EY189	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	6·3	1·5	★	★	—	—	—	—	—	—
EZ2	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·4	Max. R.M.S. 2 x 350	D.C. Output 60 Max.	—	—	—	—	—	—
EZ2 / 6X5GT	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
EZ3	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·65	Max. R.M.S 2 x 400	D.C. Output 100 Max.	—	—	—	—	—	—
EZ4	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·9	Max. R.M.S. 2 x 400	D.C. Output 175 Max	—	—	—	—	—	—
EZ11	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·29	Max. R.M.S. 2 x 250	D.C. Output 60 Max.	—	—	—	—	—	—
EZ12	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·85	Max. R.M.S. 2 x 500	D.C. Output 100 Max.	—	—	—	—	—	—
EZ35	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
EZ40	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	
—	—	—	★ *For data and notes refer type* 6S2-A.	32	H K IS	H	IC	H K IS	H	H K IS	IC	H	H K IS	A	—	**EY87**
—	—	—	**Do not use as tie point.* Max. Plate Dissipation 5 watts. Peak Heater-Cathode Voltage with Heater Negative with respect to Cathode 6600 (max.).	32	IC *	IC *	IC *	H	H	IC *	IC *	IC *	A	K	—	**EY88**
—	—	—	Condenser Input to Filter 32 µF maximum. Plate Supply Impedance = 100 Ω minimum.	21	A	K	H	H	A	NC	NC	—	—	—	—	**EY91**
—	—	—	★ *For data and notes refer type* 6AL3. **Do not use as tie point.*	32	IC *	IC *	IC *	H	H	IC *	IC *	IC *	A	K	—	**EY189**
—	—	—	Condenser Input to Filter 16 µF maximum. Plate Supply Impedance per Plate = 500 Ω min.	26	NC	H	H	K	A'	NC	NC	A''	—	—	—	**EZ2**
—	—	—	★ *For data and notes refer type* 6X5GT.	26	NC	H	H	K	A'	NC	NC	A''	—	—	—	**EZ2 / 6X5GT**
—	—	—	Condenser Input to Filter 16 µF maximum. Plate Supply Impedance per Plate = 300 Ω min.	26	NC	H	H	K	A''	NC	NC	A'	—	—	—	**EZ3**
—	—	—	Condenser Input to Filter 16 µF maximum. Plate Supply Impedance per Plate = 300 Ω min.	26	NC	H	H	K	A''	NC	NC	A'	—	—	—	**EZ4**
—	—	—	Condenser Input to Filter 60 µF maximum. Plate Supply Impedance per Plate = 600 Ω min.	27	A'	K	M	NC	H	H	NC	A''	—	—	—	**EZ11**
—	—	—	Condenser Input to Filter 32 µF maximum. Plate Supply Impedance per Plate = 300 Ω min.	27	A'	K	NC	NC	H	H	NC	A''	—	—	—	**EZ12**
—	—	—	★ *For data and notes refer type* 6X5G.	30	NC	H	A'	NC	A''	NC	H	K	—	—	—	**EZ35**
—	—	—	★ *For data and notes refer type* 6BT4.	28	H	A'	NC	NC	NC	A''	K	H	—	—	—	**EZ40**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	 Voltage Volts	 Current Amps	Plate voltage Volts	Plate current Milli-amps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milli-amps	Mutual conductance µmhos	Amplification factor	Plate resistance Meg-ohms
EZ41	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·4	Max. R.M.S. 2 x 250	D.C. Output 60 Max.	—	—	—	—	—	—
EZ80	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
EZ81	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	1·0	★	★	—	—	—	—	—	—
EZ82	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	Max. R.M.S. 2 x 300† 2 x 260*	D.C. Output 80† Max. 50* Max.	—	—	—	—	—	—
EZ90	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	6·3	0·6	★	★	—	—	—	—	—	—
F443N	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	4·0	2·0	300 550	83 45	−40 −30	300 200	4·6 1·4	3900 3200	— —	0·02 0·03
FW4/500	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	F	4·0	3·0	R.M.S. 2 × 500 (max.)	250 (max.)	—	—	—	—	—	—
FW4/800	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	F	4·0	3·0	R.M.S. 2 × 850 (max.)	125 (max.)	—	—	—	—	—	—
GZ30	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	2·0	★	★	—	—	—	—	—	—
GZ32	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	5·0	2·0	R.M.S. 2 × 300 2 × 500 (max.)	300 (max.) 125	— —	— —	— —	— —	— —	— —
GZ33	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	5·0	3·0	R.M.S. 2 × 500 (max.)	Full load D.C. Output 250	—	—	—	—	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser Input to Filter 32 μF. Plate Supply Impedance = 300 Ω min.	28	H	A^{I}	NC	NC	NC	A^{II}	K	H	—	—	—	**EZ41**
—	—	—	★ *For data and notes refer type* 6V4.	32	A^{I}	NC	K	H	H	NC	A^{II}	NC	NC	—	—	**EZ80**
—	—	—	★ *For data and notes refer type* 6CA4.	32	A^{I}	IC	K	H	H	IC	A^{II}	IC	IC	—	—	**EZ81**
—	—	—	† With heater connected to Cathode, Plate Supply Impedance per Plate = 215 Ω min. * With heater not connected to Cathode, Plate Supply Impedance per Plate = 150 Ω min.	32	A^{I}	NC	K	H	H	NC	A^{II}	NC	NC	—	—	**EZ82**
—	—	—	★ *For data and notes refer type* 6X4.	21	A^{I}	NC	H	H	NC	A^{II}	K	—	—	—	—	**EZ90**
3600	10·3	3·0	Cathode Bias Resistor 455 Ω. Total Harmonic Distortion 10% in each case.	14	A	F	G_1	F	G_2	—	—	—	—	—	—	**F443N**
12,000	12·0		Cathode Bias Resistor 650 Ω.	15	F+	A	G_1	G_2	F−	—	—	—	—	—	—	
—	—	—	Peak Inverse Plate Voltage 1600. Maximum Filter Input Capacitor 16 μF. Minimum Supply Impedance 200 Ω.	10	A^{I}	F	A^{II}	F	—	—	—	—	—	—	—	**FW4/500**
—	—	—	Maximum Filter Input Capacity 4 μF. Minimum Supply Impedance 300 Ω.	10	A^{I}	F	A^{II}	F	—	—	—	—	—	—	—	**FW4/800**
—	—	—	★ *For data and notes refer type* 5Z4.	30	S	H	—	A^{II}	—	A^{I}	—	H K	—	—	—	**GZ30**
— —	— —	— —	Maximum Filter Input Capacity 60 μF. Minimum Total Effective Plate Supply Impedance 150 Ω.	30	—	H	—	A^{I}	—	A^{II}	—	H K	—	—	—	**GZ32**
—	—	—	Capacitor Input to Filter 60 μF. (max.). Full-load D.C. Output Voltage at Input to Filter 493. Total Effective Plate Supply impedance per plate 250 Ω min.	30	NC	H	—	A^{II}	—	A^{I}	—	H K	—	—	—	**GZ33**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
GZ34	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	H	5·0	1·9	★	★	—	—	—	—	—	—
GZ37	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	5·0	2·8	R.M.S. 2 × 500 Max. 2 × 300	Full load D.C. Output 250 250	—	—	—	—	—	—
HCH81	**MEDIUM µ TRIODE R.F. HEPTODE**	Frequency Converter	H	12·6	0·15	★	★	★	★	★	★	★	★
HL94	**POWER PENTODE**	Power Amplifier	H	30	0·15	★	★	★	★	★	★	—	★
KB2	**TWIN DIODE**	Detector, Rectifier	H	2·0	0·095	Peak 125 Max. per Plate	0·5 Max. per Plate	—	—	—	—	—	—
KBC1	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	F	2·0	0·115	135	2·5	−4·5	—	—	1000	16	0·016
KBC32	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	F	2·0	0·05	100	2·4	0	—	—	1200	25	0·021
KC1	**AMPLIFIER TRIODE**	A.F. Amplifier	F	2·0	0·065	135	1·2	−1·5	—	—	600	25	0·04
KC3	**AMPLIFIER TRIODE**	A.F. Amplifier	F	2·0	0·21	135	3·0	−2·8	—	—	2500	30	0·012
KC4	**AMPLIFIER TRIODE**	A.F. Amplifier	F	2·0	0·1	135	2·2	−1·5	—	—	1400	30	0·0215

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	★ *For data and notes refer type* 5AR4.	30	IC	H	—	A_2	—	A_1	—	H K	—	—	—	**GZ34**
—	—	—	Capacitor Input to Filter 4·0 µF. Full-load D.C. Output Voltage at Input to Filter 486, 238 respectively. Total Effective Plate Supply Impedance per Plate 75 Ω min. each case	30	NC	H	—	A''	—	A'	—	H K	—	—	—	**GZ37**
—	—	Triode 1·0 Heptode 0·006	★ *For data and notes refer type* 12AJ7.	32	G_2 G_4	G_1	K G_5 IS	H	H	A^h	G_3	A^t	$G_4{}^t$	—	—	**HCH81**
★	★	0·3	★ *For data and notes refer type* 30A5.	21	K G_3	G_1	H	H	G_1	G_2	A	—	—	—	—	**HL94**
—	—	—		12	D_1	D_2	F+	F− M	K	—	—	—	—	—	—	**KB2**
—	—	3·1	As R.C. Amplifier (135 V. supply). Plate Resistor 0·2 meg. Grid Bias − 2 volts. Plate Current 0·35 mA. Gain = 12·5.	26 17	M F+	F− A	F+ D_1	NC D_2	D_1 M	D_2 F−	NC —	A —	— —	G_1 G_1	— —	**KBC1**
—	—	3·1	As R.C. Amplifier (120 V. supply). Plate Resistor 0·1 meg. Grid Bias − 0·9 volts. Plate Current 0·5 mA.	30	M	F+	A	D_1	D_2	—	F−	—	—	G_1	—	**KBC32**
—	—	3·5	As R.C. Amplifier (135 V. supply). Plate Resistor 0·32 meg. Grid Bias − 1·5 volts. Plate Current 0·18 mA. Gain = 19	26	NC	F	F	NC	NC	G_1	NC	A	—	—	—	**KC1**
—	—	6·3	Designed to drive a class B Output Valve KDD1 using a Driver Transformer having a ratio of 2 : (1 + 1).	26	NC	F	F	NC	NC	G_1	NC	A	—	—	—	**KC3**
—	—	2·9	As R.C. Amplifier (135 V. supply). Plate Resistor 0·2 meg. Grid Bias − 1·5 volts. Plate Current 0·32 mA. Gain = 21·5.	26	M	F	F	NC	NC	G_1	NC	A	—	—	—	**KC4**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
KCF30	**TRIODE** **PENTODE**	Frequency Converter	F	2·0	0·2	100 120	— 0·53	(G_1^t) 0 (G_1^p) −1·5	— 60	— 0·97	1700 260 Conv.	18 —	— —
KCH1	**TRIODE** **HEXODE**	Frequency Converter	F	2·0	0·18	135	1·0	(G_1^h) −0·5	55	1·2	Conv. 325	—	1·5
KDD1	**TWIN POWER OUTPUT TRIODE**	Class "B" Power Amplifier	F	2·0	0·22	135	Zero Signal 2 x 1·5 Max. Signal 2 x 14	0	—	—	—	—	—
KF1	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·2	135	3·0	0	135	1·0	1800	—	0·9
KF2	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·2	135	3·0	0	135	1·0	1300	—	1·1
KF3 **KF3G**	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·045	135	2·0	−0·5	135	0·6	650	—	1·3
KF4	**SHARP CUT-OFF PENTODE**	R.F. and A.F. Amplifier	F	2·0	0·065	135	2·6	−0·5	135	1·0	800	—	0·8
KF35	**SHARP CUT-OFF R.F. PENTODE**	R.F. Amplifier	F	2·0	0·05	120	1·45	−1·5	60	0·5	1080	—	—
KK2 **KK2G**	**OCTODE**	Frequency Converter	F	2·0	0·13	★	★	★	★	★	★	—	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No
— —	— —	2·0 0·01	Conversion Conductance = 10 μmhos at − 14 volts Grid (G_1^p) Bias. Triode Grid Resistor 50,000 Ω returned to F+. Peak Osc. Grid Voltage applied to Pentode Grid No. 3 = 8 V. min.	30	M	F+	A^p	G_2^p	G_1^t	A^t	F−	NC	—	G_1^p	—	**KCF30**
—	—	0·05	Conversion Conductance = 3 μmhos at − 8 volts Grid (G_1^h) Bias. Osc. Plate 70 V. at 3·0 mA. Osc. Grid Resistor 25,000 Ω Osc. Grid Current 0·28 mA. Osc. G_m = 1300 μmhos.	26	M	F	F	NC	A^t	G_1^t G_3^h	G_2^h G_4^h	A^h	—	G_1^h	—	**KCH1**
10,000	2·0	—	Total Harmonic Distortion 10%.	26	NC	F	F	NC	A''	G_1'	G_1''	A'	—	—	—	**KDD1**
—	—	0·01	Plate Current Cut-off at − 3·5 volts Grid Bias.	24 17	G_2 F	NC G_2	F M	F G_1	G_3 G_3	G_1 F	M —	— —	— —	A A	— —	**KF1**
—	—	0·01	Mutual Conductance = 2 μmhos at − 16 volts Grid Bias.	24 17	G_2 F	NC G_2	F M	F G_1	G_3 G_3	G_1 F	M —	— —	— —	A A	— —	**KF2**
—	—	0·006	Mutual Conductance = 6·5 μmhos at − 13·5 volts Grid Bias.	26 30	M M	F F	F A	NC G_2	G_3 NC	NC —	G_2 F	A NC	— —	G_1 G_1	— —	**KF3** **KF3G**
—	—	0·008	Plate Current Cut-off at − 7 volts Grid Bias. As R.C. Amplifier (135 V. supply). Following Grid Leak 1·0 meg. Plate Resistor 0·32 meg. Screen Resistor 0·64 meg. Bias − 1·5 volts (Cathode Current 0·41 mA). Gain = 72.	26	M	F	F	NC	G_3	NC	G_2	A	—	G_1	—	**KF4**
—	—	0·1	Mutual Conductance = 10 μmhos at − 9·5 volts Grid Bias.	30	M	F+	A	G_2	G_3	—	F−	—	—	G_1	—	**KF35**
—	—	0·07	★ *For data and notes refer type* KK32.	26 20 30	M F− G_6 M	F− G_6 M F+	F+ A A	NC G_2 G_2 G_5	G_2 G_1 G_1	G_1 G_3 G_5 G_2	G_3 G_5 F+ F− G_6	A — NC	— — —	G_4 G_4 G_4	— — —	**KK2** (26, 20) **KK2G** (30)

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
KK32	**OCTODE**	Frequency Converter	F	2·0	0·13	135	0·7	(G_4) −0·5	(G_{3+5}) 45	0·7	Conv. 270	—	2·5
KL2	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·265	135	18·0	−12	135	2·0	2000	—	0·03
KL4 **KL4G**	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·15	135	7·0	−5	135	1·1	2100	—	0·13
KL5	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·1	135	8·5	−6·5	135	1·5	1700	—	0·135
KL35	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	F	2·0	0·15	135	5·6	−4·5	135	—	2200	—	0·15
KLL32	**TWIN POWER OUTPUT PENTODE**	Push-pull Power Amplifier	F	2·0	0·3	135	Zero Signal 3·8 Max. Signal 16·9	−11·3	135	Max. Signal 5·7	—	—	—
KT33(C)	**POWER TETRODE**	Class "A" Power Amplifier	H	25 13	0·3 0·6	200	60	−13·3	200	10·0	—	—	—
		Class "AB" Power Amplifier				200	113	−19·1	200	18·0	—	—	—
KT61	**POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	6·3	0·95	250	40	See Note	250	7·5	10,500	—	0·075
KT66	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·27	250	85	−15	250	6·3	6300	—	0·0225
		Class "AB" Push Pull Amplifier				250	Zero Signal 162 Max. Signal 165	−17·5	250	Zero Signal 12·0 Max. Signal 20	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·07	Conversion Conductance = 2 µmhos at − 12 volts Grid (G_4) Bias. Grid No. 2 135 V. at 2·1 mA. Osc. voltage = 8·5 V. R.M.S.	30	M	F+	A	G_3 G_5	G_1	G_2	F− G_6	—	—	G_4	—	**KK32**
6000	0·8	—		26	NC	F G_3	F	NC	NC	G_1	G_2	A	—	—	—	**KL2**
19,000	0·44	—	Total Harmonic Distortion 10%.	26	NC	F G_3	F	NC	NC	G_1	G_2	A	—	—	—	**KL4**
				30	NC	F+	A	G_2	G_1	—	F− G_3	NC	—	—	—	**KL4G**
16,000	0·53	0·6	Total Harmonic Distortion 10%.	26	NC	F	F G_3	NC	NC	G_1	G_2	A	—	—	—	**KL5**
19,000	0·34	—	Fixed Bias condition. Total Harmonic Distortion 10%.	30	—	F+	A	G_2	G_1	—	F− G_3	—	—	—	—	**KL35**
Plate to Plate 16,000	1·2	—	Total Harmonic Distortion 2·8%.	30	NC	F	A''	G_1''	G_1'	A'	F G_3' G_3''	G_2' G_2''	—	—	—	**KLL32**
3000	5·0	1·2	Mutual Conductance = 10000 µmhos. At Plate Voltage = 175. Screen Voltage = 175. Grid Voltage = −7. Total Harmonic Distortion 8%.	30	H_t	H	A	G_2	G_1	NC	H	K	—	—	—	**KT33(C)**
Plate to plate 4000	15·5		Cathode Resistor per valve 240 Ω. Total Harmonic Distortion 7·5%.													
6000	4·3	1·6	Cathode Bias Resistor 90 Ω. Total Harmonic Distortion 8%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**KT61**
2200	7·25	1·1	Cathode Resistor 160 Ω. Total Harmonic Distortion 9%. Peak Input Voltage 15.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**KT66**
plate to plate 4000	17		Cathode Resistor per valve 200 Ω. Total Harmonic Distortion 4%. Peak Input Voltage grid to grid 36.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
KT71	**POWER OUTPUT TETRODE**	Class "A" Power Amplifier	H	48·0	0·16	175	70	−9·8	175	12	—	—	—
KT81	**BEAM POWER TETRODE**	Class "A" Power Amplifier	H	6·3	0·95	250	40	See Note	250	7·5	10800	—	—
KT88	**BEAM POWER TETRODE**	Class "A" Amplifier	H	6·3	1·8	250	140	—	250	—	11000	—	0·012
		Class "AB" Push-Pull Amplifier				360	Zero Signal 120 Max. Signal 135	See Note	255	Zero Signal 7·5 Max. Signal 25·0	—	—	—
L63	**MEDIUM μ TRIODE**	Class "A" Amplifier	H	6·3	0·3	250	7·6	−8·0	—	—	2600	20	7700 ohms
N37	**POWER PENTODE**	Class "A" Amplifier	H	13·0	0·3	165	53·0	−9·3	165	9·0	9500	—	0·023
		Class "AB" Push-Pull Amplifier				165	Zero Signal 107 Max. Signal 110	−11·9	165	Zero Signal 18 Max. Signal 36	—	—	—
N78	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	6·3	0·64	★	★	★	★	★	—	—	—
N108	**POWER PENTODE**	Power Amplifier	H	40	0·1	★	★	★	★	★	★	★	★
N709	**POWER PENTODE**	Class "A" Amplifier	H	6·3	0·76	250	48	−7·5	250	5·5	11300	—	0·038
PABC80	**TRIPLE DIODE HIGH μ TRIODE**	Detector, A.F. Amplifier	H	9·5	0·3	★	★	★	—	—	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance μμF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
2500	5·0	1·2	Cathode Resistor for Self-bias 120 Ω. Total Harmonic Distortion 9%.	30	NC	H	A	G_2	G_1	—	H	K	—	—	—	**KT71**
6000	4·3	—	Cathode Resistor 90 Ω.		H	A	G_2	NC	NC	G_1	K	H	—	—	—	**KT81**
—	—	1·2		30	S	H	A	G_2	G_1	—	H	K G_3	—	—	—	**KT88**
plate to plate 6000	34		Total Harmonic Distortion 3%. Supply Voltage 400. Cathode Resistor per valve 440 Ω. Maximum Signal Input grid to grid 50 V.													
—	—	4·2		30	IS	H	A	NC	G_1	—	H	K	—	—	—	**L63**
3000	4·1	0·3	Cathode Resistor 150 Ω. Total Harmonic Distortion 10% Peak Input Voltage 8·5.	21	G_1	G_3 K	H	H	A	IC	G_2	—	—	—	—	**N37**
plate to plate 3000	9·0		Cathode Resistor per valve 150 Ω. Total Harmonic Distortion 4·6%.													
★	★	0·3	★ *For data and notes refer type* 6BJ5.	21	G_1	K G_3	H	H	A	IC	G_2	—	—	—	—	**N78**
★	★	0·3	★ *For data and notes refer type* N37.	21	G_1	G_3 K	H	H	A	IC	G_2	—	—	—	—	**N108**
5000	6·0	0·5	Total Harmonic Distortion 10%.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**N709**
—	—	2·2	★ *For data and notes refer type* 6AK8.	32	D_3	D_2	K_{d2}	H	H	D_1	S K_t K_{d1} K_{d3}	G_1	A	—	—	**PABC80**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
PC86	**HIGH-SLOPE U.H.F. TRIODE**	U.H.F. Amplifier	H	3·8	0·3	★	★	★	—	—	★	★	★
PC95	**SEMI-REMOTE CUT-OFF V.H.F. TRIODE**	R.F. Amplifier	H	3·6	0·3	★	★	★	—	—	★	★	—
PCC84	**TWIN TRIODE**	R.F. Amplifier	H	7·4	0·3	★	★	★	—	—	★	★	—
PCC85	**HIGH μ TWIN TRIODE**	R.F. Amplifier	H	9·0	0·3	★	★	★	—	—	★	★	—
PCC88	**SHARP CUTOFF V.H.F. TWIN TRIODE**	Class "A" Amplifier (Each Unit)	H	7·0	0·3	★	★	★	—	—	★	★	—
PCC89	**SEMI-REMOTE CUT-OFF V.H.F. TWIN TRIODE**	R.F. Amplifier (Each Unit)	H	7·5	0·3	90	15	−1·2	—	—	12,300	36	2900 ohms
PCF80	**MEDIUM μ TRIODE REMOTE CUT-OFF R.F. PENTODE**	V.H.F. Frequency Changer	H	9·0	0·3	★	★	★	★	★	★	★	★
PCF82	**MEDIUM μ TRIODE SHARP CUTOFF R.F. PENTODE**	Frequency Converter	H	9·5	0·3	★	★	★	★	★	★	★	★
PCL81	**MEDIUM μ TRIODE POWER PENTODE**	Pentode Power Amplifier	H	12·6	0·3	170	30·0	−5·3	170	5·3	8750	—	0·022
		Triode Class "A" Amplifier				170	0·35	−1·5	—	—	—	—	—
PCL82	**HIGH μ TRIODE POWER PENTODE**	Triode Voltage Amplifier Pentode Power Amplifier	H	16·0	0·3	★	★	★	★	★	★	★	★
PCL83	**LOW μ TRIODE POWER PENTODE**	Triode Class "A" Amplifier	H	12·6	0·3	250	10·5	−8·5	—	—	2200	17	7700 ohms
		Pentode Power Amplifier				170	30	−9·5	170	4·8	5500	—	0·053

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	2·0	★ *For data and notes refer type* 6CM4.	32	A	G	K	H	H	G	K	G	A	—	—	**PC86**
—	—	0·38	★ *For data and notes refer type* 6ER5.	21	K	G	H	H	A	IS	K	—	—	—	—	**PC95**
—	—	$1{\cdot}1_{t_1}$ $2{\cdot}3_{t_2}$	★ *For data and notes refer type* 7AN7.	32	K''	G_1'' S	A''	H	H	G_1'	K_i'	K_o'	A'	—	—	**PCC84**
—	—	1·5	★ *For data and notes refer type* 9AQ8.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	S	—	—	**PCC85**
—	—	1·4	★ *For data and notes refer type* 6DJ8.	32	A''	G''	K''	H	H	A'	G'	K'	IS	—	—	**PCC88**
—	—	Unit 1 1·9 Unit 2 4·1		32	K''	G'' IS	A''	H	H	G'	K'	K'	A'	—	—	**PCC89**
—	—	Pentode 0·02 Triode 1·5	★ *For data and notes refer type* 9A8.	32	A^t	G_1^p	G_2^p	H	H	A^p	IS K^p G_3^p	K^t	G_1^t	—	—	**PCF80**
—	—	Triode 1·8 Pentode 0·01	★ *For data and notes refer type* 9U8.	32	A^t	G_1	G_2	H	H	A^p	K^p G_3 IS	K^t	G_1^t	—	—	**PCF82**
5700	2·0	—	Total Harmonic Distortion 10%.	32	G_1^t	G_2	K G_3	H	H	A^p	A^t	K G_3	G_1^p	—	—	**PCL81**
—	—		Plate Resistor 0·2 mΩ. Voltage gain 43.													
★	★	Triode 4·2 Pentode 0·3	★ *For data and notes refer type* 16A8.	32	G_1^t	K^p G_3 IS	G_1^p	H	H	A^p	G_2	K^t	A^t	—	—	**PCL82**
—	—	1·6		32	A^t	G^t	K^t	H	H	A^p	K^p G_3	G_2	G_1	—	—	**PCL83**
5500 ohms	2·2	< 0·2	Total Harmonic Distortion 10%. Also intended for use as Triode Vertical Blocking Oscillator and Pentode Deflection Amplifier.													

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
PCL84	**HIGH μ TRIODE POWER PENTODE**	Pentode Video Amplifier Triode Sync. Separator	H	15·0	0·3	★	★	★	★	★	★	★	—
PL2D21	**THYRATRON**	For Relay Service	H	6·3	0·6	R.M.S. 400	—	−6·0	0	—	—	—	—
PL33	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	19·0	0·3	225	32	−5·3	225	3·4	9000	—	0·05
PL36	**POWER PENTODE**	Horizontal Deflection Amplifier	H	25	0·3	★	★	★	★	★	★	—	★
PL81	**LINE OUTPUT PENTODE**	Line Output Amplifier and Class "B" Power Amplifier	H	21·5	0·3	★	★	★	★	★	★	—	—
PL82	**POWER OUTPUT PENTODE**	Frame Output Amplifier, Class "A" Power Amplifier	H	16·5	0·3	★	★	★	★	★	★	—	★
PL83	**VIDEO OUTPUT PENTODE**	Video Amplifier	H	15·0	0·3	★	★	★	★	★	★	—	★
PL84	**POWER PENTODE**	Power Amplifier	H	15·0	0·3	★	★	★	★	★	★	—	★
PL5727	**GAS-FILLED THYRATRON**	Grid-controlled Rectifier	H	6·3	0·6	Peak Inverse Plate Voltage .. 1300 Absolute max. Peak Plate Voltage .. .. 650 Absolute max. Peak Cathode Current .. .. 500 mA. Absolute max. Cathode Current averaged over any 30 second period .. .. 100 mA. Absolute max. Surge Current Max. Duration 0·1 second .. .. .. 10 amp. Absolute max.							
PM84	**TUNING INDICATOR WITH TRIODE**	Timing Indicator	H	4·2	0·3	Target Volts 170	Target Current 0·6	0 for Shadow Length 20 m.m.	—	—	—	—	—
PY31	**HALF-WAVE RECTIFIER**	Half-wave Rectifier	H	17·0	0·3	Max. R.M.S. 250	D.C. Output 125 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu$F	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	—	Pentode < 0·1 Triode 2·7	★ *For data and notes refer type* 6DX8.	32	G^t	A^t	K^t	H	H	A^p	K^p G_3 IS	$G_1{}^p$	$G_2{}^p$	—	—	**PCL84**
—	—	0·026	Grid Resistor 1·0 mΩ. Plate Resistor 20 kΩ. Peak (G_1) Signal Voltage 6	21	G_1	K	H	H	G_2	A	G_2	—	—	—	—	**PL2D21**
7000	3·3	1·0	Total Harmonic Distortion 10%.	30	NC	H	A	G_2	G_1	—	H	K G_3	—	—	—	**PL33**
—	—	1·1	★ *For data and notes refer type* 25E5.	30	IC	H	IC	G_2	G_1	—	H	K G_3	—	A	—	**PL36**
—	—	0·8	★ *For data and notes refer type* 21A6.	32	IC	G_1	K	H	H	IC	IC	G_2	G_3	A	—	**PL81**
★	★	0·1	★ *For data and notes refer type* 16A5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**PL82**
—	—	0·1	★ *For data and notes refer type* 15A6.	32	G_2	G_1	K	H	H	G_3	A	IS	NC	—	—	**PL83**
★	★	0·6	★ *For data and notes refer type* 6CW5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**PL84**
Grid No. 1 Voltage before Conduction —100. Grid No. 1 Voltage during Conduction —10. Grid No. 2 Voltage before Conduction —100. Grid No. 2 Voltage during Conduction —10.				21	G_1	K	H	H	G_2	A	G_2	—	—	—	—	**PL5727**
—	—	—	Triode Plate Resistor 0·47 MΩ. Grid bias for zero shadow length = —15 volts.	32	G^t	IC	K G^i	H	H	T	DE	IC	A^t	—	—	**PM84**
—	—	—	Condenser Input to Filter 60 μF maximum. Plate Supply Impedance 175 Ω minimum.	30	NC	H	NC	—	A	—	H	K	—	—	—	**PY31**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
			TYPE	Voltage Volts	Current Amps								
PY32	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	29	0·3	R.M.S. 250 (max.) 200	Full-load D.C. Output 210 325 (max.)	—	—	—	—	—	—
PY80	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	19·0	0·3	★	★	—	—	—	—	—	—
PY81	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	F	17·0	0·3	★	★	—	—	—	—	—	—
PY82	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	19·0	0·3	★	★	—	—	—	—	—	—
PY83	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	20·0	0·3	Peak Inverse 5000 (max.)	Peak 450 (max.) Average 150 (max.)	—	—	—	—	—	—
PY88	**HALF-WAVE VACUUM RECTIFIER**	Booster Diode	H	30	0·3	★	★	—	—	—	—	—	—
PZ30	**FULL-WAVE RECTIFIER**	Half-wave Rectifier	H	52·0	0·3	Max. R.M.S. 240	200 per Plate Max.	—	—	—	—	—	—
R10	**HALF-WAVE VACUUM RECTIFIER**	High Voltage Rectifier	H	4·0	0·5	Peak Inverse no load 15500 (max.)	Peak 40 (max.)	—	—	—	—	—	—
R12	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	H	6·3	0·09	Peak Inverse 17000 (max.)	Average 0·1 (max.)	—	—	—	—	—	—
R17	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	6·3	0·8	R.M.S. 350	125	—	—	—	—	—	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu$F	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No
—	—	—	Capacitor Input to Filter 100 μF max. D.C. Output Voltage at Input to Filter 264, 182 respectively. Total Effective Plate Supply Impedance 33, 23 Ω min.	30	—	H	A	—	A	—	H	K	—	—	—	**PY32**
—	—	—	★ *For data and notes refer type* 19X3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**PY80**
—	—	—	★ *For data and notes refer type* 17Z3.	32	IC	IC	IC	F	F	IC	IC	IC	A	K	—	**PY81**
—	—	—	★ *For data and notes refer type* 19Y3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**PY82**
—	—	—	Max. Heater Cathode Voltage during flyback 5000.	32	IC	IC	IC	H	H	IC	IC	IC	A	K	—	**PY83**
—	—	—	★ *For data and notes refer type* 30AE3. **Do not use as tie point.*	32	IC *	IC *	IC *	H	H	IC *	IC *	IC *	A	K	—	**PY88**
—	—	—	Condenser Input to Filter 50 μF maximum. Plate Supply Impedance per Plate = 50 Ω min.	30	NC	H	A'	K'	A''	H_t	H	K''	—	—	—	**PZ30**
—	—	—	Supply Frequency 100 Kc/s.	21	K	K	H	H	K	K	K	—	—	A	—	**R10**
—	—	—	Series Plate Impedance ·1 mΩ. minimum. Filter capacitor 0·1 μF. max.	3	H	H K	—	—	—	—	—	—	—	A	—	**R12**
—	—	—	Total Effective Plate Supply Impedance 50 Ω min. Input Filter Capacitor 32 μF. max. Peak Inverse Plate Voltage 1450 max. Peak Plate Current 750 mA.	32	IC	IC	K	H	H	IC	IC	IC	IC	A	—	**R17**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
R18	**HALF-WAVE VACUUM RECTIFIER**	Half-Wave Rectifier	H	6·3	1·1	R.M.S. 500	150 (max.)	—	—	—	—	—	—
R19	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	F	1·25	0·2	Peak Inverse 25000 (max.)	Peak 12 (max.) Average 2·0 (max.)	—	—	—	—	—	—
RL7	**SHARP CUT-OFF R.F. PENTODE**	U.H.F. Amplifier	H	6·3	0·3	★	★	★	★	★	★	—	★
RL16	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·43	★	★	★	—	—	★	★	★
RL18	**OSCILLATOR TRIODE**	U.H.F. Amplifier	H	6·3	0·25	★	★	★	—	—	★	★	★
TH1	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·015	—	—	—	—	—	—	—	—
TH2	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·03	—	—	—	—	—	—	—	—
TH3	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·075	—	—	—	—	—	—	—	—
TH4	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·15	—	—	—	—	—	—	—	—
TH5	**THERMO-COUPLE**	Thermo-Couple	—	—	0 to 0·3	—	—	—	—	—	—	—	—
U30	**CURRENT REGULATOR**	Current Regulator	F	70 to 122·5	0·1	—	—	—	—	—	—	—	—
U37	**HALF-WAVE VACUUM RECTIFIER**	Pulsed Rectifier	F	1·4	0·14	Peak Inverse 15000 (max.)	Peak 12·0 (max.) Average 2·0 (max.)	—	—	—	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B S.	
—	—	—	Peak Heater Cathode Voltage 900 max. Peak Inverse Plate Voltage 1800 max. Minimum Supply Impedance 200 Ω. Maximum Filter Input Capacitor 8 μF.	32	IC	IC	K	H	H	IC	IC	IC	IC	A	—	**R18**
—	—	—	* May be used as a filament resistor tie point or connected to filament. Otherwise do not use.	32	F IS	F	* NC	F IS	F	F IS	* NC	F	F IS	A	—	**R19**
—	—	0·02	★ *For data and notes refer type* EF54.	33	H	A	G_2	K G_3 IS	K G_3 IS	G_1	K G_3 IS	K G_3 IS	H	—	—	**RL7**
—	—	3·1	★ *For data and notes refer type* EC52.	33	H	G_1	K	A	NC	NC	NC	NC	H	—	—	**RL16**
—	—	1·3	★ *For data and notes refer type* EC53.	16	H	K	H	G_1	A	—	—	—	—	—	—	**RL18**
—	—	—	12 mV at 10 mA heater current. Thermo-resistance 5·5 Ω. Heater Resistance 75 Ω.	10	−E	F	+E	F	—	—	—	—	—	—	—	**TH1**
—	—	—	12 mV at 20 mA heater current. Thermo-resistance 3·0 Ω. Heater Resistance 23 Ω.	10	−E	F	+E	F	—	—	—	—	—	—	—	**TH2**
—	—	—	12 mV at 40 mA heater current. Thermo-resistance 3·0 Ω. Heater Resistance 7·3 Ω.	10	−E	F	+E	F	—	—	—	—	—	—	—	**TH3**
—	—	—	12 mV at 100 mA heater current. Thermo-resistance 3·0 Ω. Heater Resistance 2·2 Ω.	10	−E	F	+E	F	—	—	—	—	—	—	—	**TH4**
—	—	—	12 mV at 200 mA heater current. Thermo-resistance 3·0 Ω. Heater Resistance 1·1 Ω.	10	−E	F	+E	F	—	—	—	—	—	—	—	**TH5**
—	—	—		30	NC	NC	R	NC	NC	NC	R	NC	—	—	—	**U30**
—	—	—	For applications where full A.C. plate voltage is applied on switching the peak inverse plate voltage is limited to 10,000 volts.	3	F	F	—	—	—	—	—	—	—	A	—	**U37**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	Voltage Volts	Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
U52 / 5U4G	**FULL-WAVE VACUUM RECTIFIER**	Full-wave Rectifier	F	5·0	2·25	Max. R.M.S. 2 x 500	D.C. Output 250 Max.	—	—	—	—	—	—
U76	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·16	Max. R.M.S. 250	D.C. Output 100 Max.	—	—	—	—	—	—
U107	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	40	0·1	R.M.S. 250 (max.)	90 (max.)	—	—	—	—	—	—
U709	**FULL-WAVE VACUUM RECTIFIER**	Full-Wave Rectifier	H	6·3	0·95	★	★	—	—	—	—	—	—
UABC80	**TRIPLE DIODE HIGH μ TRIODE**	Detector, A.F. Amplifier	H	28·0	0·1	★	★	★	—	—	★	★	★
UAF41	**DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	12·6	0·1	200	6·0	−2·4	See Note	1·9	1900	—	1·3
UAF42	**DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	12·6	0·1	200	5·0	−2	85 See Note	1·5	2000	—	1·0
UB41	**TWIN DIODE**	Detector Rectifier	H	19·0	0·1	150 Max. per Plate	9·0 Max. per Plate	—	—	—	—	—	—
UBC1	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	12·6	0·1	200	3·0	−1·7	—	—	2000	65	0·033

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	—	Condenser Input to Filter 8 μF. Plate Supply Impedance per Plate = 310 Ω min.	30	NC	F	—	A''	—	A'	—	F	—	—	—	**U52 / 5U4G**
—	—	—	Plate Supply Impedance per Plate = 100 Ω min.	30	NC	H	—	—	A	—	H	K	—	—	—	**U76**
—	—	—	Max. Filter Input Capacitor 16 μF. Minimum Plate Supply Impedance 75 Ω. Peak Inverse Plate Voltage 700 max.	21	H	A	K	NC	NC	A	H	—	—	—	—	**U107**
—	—	—	★ *For data and notes refer type* 6CA4.	32	A''	IC	K	H	H	IC	A'	IC	IC	—	—	**U709**
—	—	2·2	★ *For data and notes refer type* 6AK8.	32	D_3	D_2	K_{d2}	H	H	D_1	IS K_{d1} K_t K_{d3}	G_1	A_t	—	—	**UABC80**
—	—	0·002	Series Screen Resistor 44,000 Ω (200 V. supply). Mutual Conductance = 19 μmhos at − 34 volts Grid Bias. As R.C. Amplifier (170 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·2 meg. Screen Resistor 0·73 meg. Cathode Resistor 2700 Ω. Gain = 78.	28	H	A	D	IC	G_2	G_1	K G_3 IS	H	—	—	—	**UAF41**
—	—	0·002	Series Screen Resistor 76,000 Ω (200 V. supply). Mutual Conductance = 20 μmhos at − 34 volts Grid Bias. As R.C. Amplifier (170 V. supply). Following Grid Leak 0·7 meg. Plate Resistor 0·22 meg. Screen Resistor 0·82 meg. Cathode Resistor 2700 Ω. Gain = 80.	28	H	A	D	G_3	G_2	G_1	K IS	H	—	—	—	**UAF42**
—	—	—		28	H	NC	K''	D_2	IS	D_1	K'	H	—	—	—	**UB41**
—	—	—		30	H	M	A	NC	D_2	K	D_1	H	—	G_1	—	**UBC1**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
UBC41	**DUO-DIODE TRIODE**	Detector A.F. Amplifier	H	14·0	0·1	170	1·5	−1·55	—	—	1650	70	0·042
UBC80	**DUO DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	14·0	0·1	★	★	★	—	—	★	★	★
UBC81	**DUO-DIODE HIGH µ TRIODE**	Detector A.F. Amplifier	H	14·0	0·1	★	★	★	—	—	★	★	★
UBF2	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	12·6	0·1	200	5·0	−2	100	1·6	1800	—	1·0
UBF11	**DUO-DIODE REMOTE CUT-OFF PENTODE**	Detector R.F. and A.F. Amplifier	H	20·0	0·1	200	5·0	−2	80	1·7	1800	—	1·5
UBF80	**DUO-DIODE REMOTE CUT-OFF R.F. PENTODE**	Detector R.F. Amplifier	H	17·0	0·1	200	5·0	−2	See Note	1·75	2200	—	1·0
UBF89	**DUO DIODE REMOTE CUTOFF R.F. PENTODE**	Detector R.F. Amplifier	H	19·0	0·10	200	11·0	−1·5	*100	3·3	4500	—	0·6
UBL1	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	55·0	0·1	200	55	−11·5	200	11·0	8500	—	0·02
UBL21	**DUO-DIODE POWER OUTPUT PENTODE**	Detector Class "A" Power Amplifier	H	55·0	0·1	200 180 100	55·0 61·0 32·5	−13 −10 −5·3	200 180 100	9·5 10·0 5·5	8000 9000 7500	— — —	0·025 0·022 0·025
UC92	**R.F. HIGH µ TRIODE**	R.F. Amplifier	H	9·5	0·1	200	11·5	−1·0	—	—	6700	70	0·015
UCC85	**HIGH µ TWIN TRIODE**	R.F. Amplifier	H	26·0	0·1	★	★	★	—	—	★	★	—

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	1·3	As R.C. Amplifier (170 V. supply). Following Grid Leak 0·68 meg. Plate Resistor 0·22 meg. Cathode Resistor 5600 Ω. Gain = 44.	28	H	A	G_1	IS	D_2	D_1	K	H	—	—	—	**UBC41**
—	—	1·3	★ *For data and notes refer type* EBC80.	32	A	G_1	K	H	H	D_1	IS	D_2	IC	—	—	**UBC80**
—	—	1·3	★ *For data and notes refer type* UBC41.	32	A	G_1	K	H	H	D_1	IS	D_2	IC	—	—	**UBC81**
—	—	0·002		30	H	M	A	G_2	D_2	K	D_1	H	—	G_1	—	**UBF2**
—	—	0·002	As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·7 meg. Cathode Resistor 2400 Ω. Gain = 82.	27	G_2	G_1	G_3 K M	A	H	H	D_1	D_2	—	—	—	**UBF11**
—	—	0·0025	Series Screen Resistor 68,000 Ω (200 V. supply). Mutual Conductance = 22 μmhos at − 31·5 volts Grid Bias.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**UBF80**
—	—	0·0025	* Series Screen Resistor 30,000 Ω. Mutual Conductance = 120 μmhos at −20 volts grid bias.	32	G_2	G_1	K IS	H	H	A	D_1	D_2	G_3	—	—	**UBF89**
3500	5·2	0·8	Total Harmonic Distortion 10%.	30	H	NC	A	G_2	D_2	K G_3	D_1	H	—	G_1	—	**UBL1**
3500 3000 3000	4·8 4·8 1·35	1·2	Total Harmonic Distortion 10% in each case.	29	H	A	G_1	G_2	D_2	D_1	K G_3	H	—	—	—	**UBL21**
—	—	1·6	For use as oscillator or mixer in F.M./A.M. receivers.	21	A	IS	H	H	—	G_1	K	—	—	—	—	**UC92**
—	—	1·5	★ *For data and notes refer type* PCC85.	32	A''	G_1''	K''	H	H	A'	G_1'	K'	S	—	—	**UCC85**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
UCH4	**TRIODE HEPTODE**	Frequency Converter	H	20·0	0·1	★	★	★	★	★	★	—	★
UCH11	**TRIODE HEXODE**	Frequency Converter	H	20·0	0·1	200	2·5	(G_1h) −2	($G_{2+4}h$) 80 See Note	3·0	Conv. 750	—	1·0
UCH21	**TRIODE HEPTODE**	Frequency Converter	H	20·0	0·1	200	3·5	(G_1h) −2	($G_{2+4}h$) 100 See Note	6·5	Conv. 750	—	1·0
UCH41	**TRIODE HEXODE**	Frequency Converter	H	14·0	0·1	200	3·0	(G_1h) −2·2	($G_{2+4}h$) 105 See Note	2·1	Conv. 550	—	1·0
UCH42	**TRIODE HEXODE**	Frequency Converter	H	14·0	0·1	200	3·0	(G_1h) −2	($G_{2+4}h$) 85 See Note	3·0	Conv. 750	—	>1·0
UCH80	**TRIODE HEXODE**	Frequency Converter	H	14·0	0·10	★	★	★	★	★	★	★	★

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·002	★ *For data and notes refer type* UCH21.	30	H	K M G_5	A^h	G_2^h G_4^h	G_1^t	G_3^h	A^t	H	—	G_1^h	—	**UCH4**
—	—	0·001	Series Screen Resistor 40,000 Ω (200 V. supply). Conversion Conductance = 7·5 µmhos at − 18 volts Grid (G_1^h) Bias. Osc. Plate 200 V. at 2·8 mA. Osc. Grid Resistor 50,000 Ω. Osc. Grid Current 0·16 mA. Osc. G_m = 3000 µmhos.	27	G_2^h G_4^h	G_1^h	K M	A^h	H	H	G_1^t G_3^h	A^t	—	—	—	**UCH11**
—	—	0·002	Series Screen Resistor 15,500 Ω (200 V. supply). Conversion Conductance = 7·5 µmhos at − 28 volts Grid (G_1^h) Bias. Osc. Plate Current 4·1 mA through 20,000 Ω (200 V. supply). Osc. Grid Resistor 50,000 Ω. Osc. Grid Current 0·19 mA.	29	H	A^h	A^t	G_1^t	G_2^h G_4^h	G_1^h	G_3^h	H	—	—	K G_5^h S	**UCH21**
—	—	0·1	Screen connected to junction of two Resistors R_1 and R_2 in series, R_1 of 22,000 Ω is connected to B+ and R_2 of 47,000 Ω to B−. Conversion Conductance = 5 µmhos at − 27 volts Grid (G_1^h) Bias. Osc. Plate Current 4·6 mA through 20,000 Ω (200 V. supply). Osc. Grid Resistor 20,000 Ω. Osc. Grid Current 0·36 mA.	28	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K	H	—	—	—	**UCH41**
—	—	0·1	Screen connected to junction of two Resistors R_1 and R_2 in series, R_1 of 18,000 Ω is connected to B+ and R_2 of 27,000 Ω to B−. Conversion Conductance = 7·5 µmhos at − 27·5 volts Grid (G_1^h) Bias. Osc. Plate Current 5·2 mA through 22,000 Ω (200 V. supply). Osc. Grid Resistor 47,000 Ω. Osc. Grid Current 0·2 mA.	28	H	A^h	A^t	G_1^t G_3^h	G_2^h G_4^h	G_1^h	K IS	H	—	—	—	**UCH42**
—	—	0·1	★ *For data and notes refer type* 6AN7.	32	G_2^h G_4^h	G_1^h	K G_5^h IS	H	H	IC	A^h	A^t	G_3^h G_1^t	—	—	**UCH80**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance µmhos	Amplification factor	Plate resistance Megohms
UCH81	**TRIODE HEPTODE**	Frequency Converter	H	19·0	0·1	200	3·7	−2·6 See Note	119 See Note	8·1	Conv. 775	—	1·0
UCL11	**TRIODE POWER OUTPUT TETRODE**	A.F. and Class "A" Power Amplifier	H	60·0	0·1	200 200	2·0 45·0	−2 −8·5	— 200	— 6·0	2100 9000	63 —	0·03 0·018
UCL82	**HIGH μ TRIODE POWER PENTODE**	Triode Voltage Amplifier Pentode Power Amplifier	H	50	0·1	★	★	★	★	★	★	★	★
UF8	**LOW-NOISE MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	6·0	−2	(G_3) 200	0·12	1600	—	0·45
UF9	**MEDIUM CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	6·0	−2·5	100	1·7	2200	—	1·2
UF11	**REMOTE CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	15·0	0·1	200	6·0	−2	80	1·7	2200	—	1·5
UF21	**MEDIUM CUT-OFF PENTODE**	R.F. and A.F. Amplifier	H	12·6	0·1	200	6·0	−2·5	100	1·7	2200	—	1·0
UF41	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	7·2	−3	See Note	2·1	2300	—	1·0

TECHNICAL DATA

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·006	Conversion Conductance = 7·75 μmhos at – 28 V. grid (G_1^h) bias. Cathode bias resistor 150 Ω. Osc. plate current 5·4 mA. through 15000 Ω (200 volts supply). Osc. grid resistor 47000 Ω. Osc. grid current 0·23 mA. Series screen resistor 10000 Ω (200 V. supply).	32	G_2^h G_4^h	G_1^h	IS K G_5^h	H	H	A^h	G_3^h	A^t	G_1^t	—	—	**UCH81**
— 4500	— 4·0	1·4 0·9	Triode Unit (t). Tetrode Unit (o). Total Harmonic Distortion 10%.	27	A^t	G_1^t	K	A^o	H	H	G_2^o	G_1^o	—	—	—	**UCL11**
★	★	Triode 4·2 Pentode 0·3	★ *For data and notes refer type* 6BM8.	32	G_1^t	K^p G_3 IS	G_1^p	H	H	A^p	G_2^p	K^t	A^t	—	—	**UCL82**
—	—	0·007	Grids Nos. 2 and 4 tied to Cathode. Equivalent Noise Resistance 3200 Ω. Mutual Conductance = 16 μmhos at – 26 volts Grid Bias.	30	H	M	A	G_3	G_2	G_4	K	H	—	G_1	–	**UF8**
—	—	0·002	Mutual Conductance = 22 μmhos at – 16 volts Grid Bias.	30	H	M	A	G_2	NC	G_3	K	H	—	G_1	—	**UF9**
—	—	0·002	Mutual Conductance = 22 μmhos at – 42 volts Grid Bias. As R.C. Amplifier (200 V. supply). Plate Resistor 0·2 meg. Screen Resistor 0·6 meg. Cathode Resistor 2000 Ω. Gain = 77.	27	G_2	G_1	K G_3 M	NC	H	H	NC	A	—	—	—	**UF11**
—	—	0·002	Mutual Conductance = 22 μmhos at – 19 volts Grid Bias.	29	H	A	G_2	G_3 IS	NC	G_1	K	H	—	—	—	**UF21**
—	—	0·002	Series Screen Resistor 40,000 Ω (200 V. supply). Mutual Conductance = 23 μmhos at – 34 volts Grid Bias.	28	H	A	IC	IC	G_2	G_1	K G_3 IS	H	—	—	—	**UF41**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
UF42	**SHARP CUT-OFF R.F. PENTODE**	Wide-band Amplifier	H	21·0	0·1	170	10·0	−2	170	2·3	8500	—	0·3
UF43	**MEDIUM CUT-OFF R.F. PENTODE**	Wide-band Amplifier	H	21·0	0·1	200	15	−2 See Note	135 See Note	3·5	6400	—	0·4
UF80	**SHARP CUTOFF R.F. PENTODE**	R.F. Amplifier	H	19·0	0·1	★	★	★	★	★	★	—	★
UF81	**REMOTE CUTOFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	★	★	★	★	★	★	—	★
UF85	**REMOTE CUTOFF R.F. PENTODE**	R.F. Amplifier	H	19·0	0·1	200	11·4	−2·3	116	3·1	6100	—	0·35
UF86	**SHARP CUT-OFF A.F. PENTODE**	A.F. Amplifier (low noise)	H	12·6	0·1	200	3·0	−2·0	140	0·6	2000	38	2·5
UF89	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	170 100	10·0 8·8	−2 −1·5	★ †	3·4 3·3	3600 3600	— —	0·5 0·3
UL1	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	0·0	0·1	200	55	−11·5	200	1·0	8500	—	0·02
UL41	**POWER OUTPUT PENTODE**	Class "A" Power Amplifier	H	45·0	0·1	170 110 100	53 32 29	−10·4 −6·4 −5·7	170 110 100	10·0 6·0 5·5	9500 8500 8000	— — —	0·02 0·018 0·018
UL44	**LINE OUTPUT PENTODE**	Line Output Amplifier	H	45·0	0·1	175	28·5	−13·5	175	4·7	7000	—	—

Load resistance Ohms	Power output Watts	Grid-plate capacitance µµF	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·005	Plate Current Cut-off at − 6 volts Grid Bias.	28	H	A	IS	G_3	G_2	G_1	K	H	—	—	—	**UF42**
—	—	0·006	Cathode bias resistor 105 Ω. Series screen resistor 18000 Ω (200 V. supply). Mutual Conductance = 64 µmhos at − 22 V. grid bias. Equivalent noise resistance = 1700 Ω.	28	H	A	IS	G_3	G_2	G_1	K	H	—	—	—	**UF43**
—	—	0·007	★ *For data and notes refer type* 6BX6.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**UF80**
—	—	0·002	★ *For data and notes refer type* 6BH5.	32	G_2	G_1	K G_3 IS	H	H	A	IC	IC	NC	—	—	**UF81**
—	—	0·007	Series Screen Resistor 27 kΩ. Mutual Conductance = 61 µmhos at −28 volts grid bias.	32	K	G_1	K	H	H	IS	A	G_2	G_3	—	—	**UF85**
—	—	0·025	R.C. Amplifier (200 volt supply). Plate Load Resistor 0·1 MΩ. Grid No. 2 Resistor 0·39 MΩ. Cathode Resistor 1000 Ω. Voltage Gain 115. Following Grid Resistor ·33 MΩ.	32	G_2	IS	K	H	H	A	IS	G_3	G_1	—	—	**UF86**
— —	— —	0·002	★ Series screen resistor 18000 Ω (170 V. supply). Mutual Conductance = 36 µmhos at − 27 V. grid bias. † Series screen resistor 1500 Ω (100 V. supply). Mutual Conductance = 36 µmhos at − 15 volts grid bias.	32	IS	G_1	K	H	H	S	A	G_2	G_3	—	—	**UF89**
3500	5·5	0·8		30	H	NC	A	G_2	G_1	NC	K	H	—	—	—	**UL1**
3000 3000 3000	4·25 1·7 1·35	1·0	Total Harmonic Distortion 10% in each case.	28	H	A	IC	NC	G_2	G_1	K G_3	H	—	—	—	**UL41**
—	—	1·0	Peak Plate Voltage = 3 kV. maximum.	28	H	NC	IC	G_3	G_2	G_1	K	H	—	A	—	**UL44**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Volt-age Volts	CATHODE DATA Cur-rent Amps	Plate volt-age Volts	Plate cur-rent Milli-amps	Grid bias (ap-prox.) Volts	Screen volt-age Volts	Screen cur-rent Milli-amps	Mutual con-duct-ance µmhos	Ampli-fication factor	Plate resist-ance Meg-ohms
UL80	**POWER PENTODE**	Power Amplifier	H	45	0·1	★	★	★	★	★	★	—	★
UL84	**POWER PENTODE**	Power Amplifier	H	45	0·1	★	★	★	★	★	★	—	★
UM4	**TUNING INDICATOR with TRIODES**	Tuning Indicator	H	12·6	0·1	Target Volts 200	Target Current 1·4	0 for Sha low Angle of 90° in each case.	—	—	—	—	—
UM34	**TUNING INDICATOR with TRIODES**	Tuning Indicator	H	12·6	0·1	★	★	—	—	—	—	—	—
UM80	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	19·0	0·1	Target volts 200	Target Current 5·7	−1·0 for Shadow angle 4°	—	—	—	—	—
UM81	**TUNING INDICATOR WITH TRIODE**	Tuning Indicator	H	19·0	0·1	Target volts 200	Target current 5·7	0 for Shadow angle 90°	—	—	—	—	—
UQ80	**ENNEODE**	F.M. Detector Limiter	H	12·6	0·1	★	★	★	★	★	—	—	★
UR3C	**FULL-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	30·0	0·2	★	★	—	—	—	—	—	—
UY1N	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	★	★	—	—	—	—	—	—
UY11	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	★	★	—	—	—	—	—	—
UY21	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	Max. R.M.S. 250	D.C. Output 140 Max.	—	—	—	—	—	—
UY31	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	50·0	0·1	Max. R.M.S. 250	D.C. Output 125 Max.	—	—	—	—	—	—
UY41	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	31·0	0·1	Max. R.M.S. 250	D.C. Output 100 Max.	—	—	—	—	—	—

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
★	★	1·0	★ *For data and notes refer type* 6M5.	32	G_2	G_1	K G_3	H	H	IC	A	IC	NC	—	—	**UL80**
★	★	0·6	★ *For data and notes refer type* 45B5.	32	IC	G_1	K G_3	H	H	IC	A	IC	G_2	—	—	**UL84**
—	—	—	Dual sensitivity type. Triode Plate Resistor 1·0 meg. for each plate lead Min. shadow angles occur at − 4·2 volts and − 12·5 volts Grid ($G_1{}^t$) Bias respectively.	30	H	NC	A'' DE''	T	$G_1{}^t$	A' DE'	K $G_1{}^i$	H	—	—	—	**UM4**
—	—	—	★ *For data and notes refer type* EM34.	30	NC	H	A' DE'	$G_1{}^t$	T	A'' DE''	H	K $G_1{}^i$	—	—	—	**UM34**
—	—	—	Triode Plate Resistor 0·5 mΩ. Grid Resistor 3 mΩ. Shadow angle of 50° occurs at −14 volts ($G_1{}^t$) bias.	32	$G_1{}^t$	K $G_1{}^i$	IC	H	H	IC	A^t DE	IC	T	—	—	**UM80**
—	—	—	Triode Plate Resistor 0·5 mΩ. Grid Resistor 3 mΩ. Shadow angle of 0° occurs at −14 volts ($G_1{}^t$) bias.	32	$G_1{}^t$	K $G_1{}^i$	IC	H	H	IC	A^t DE	IC	T	—	—	**UM81**
—	—	—	★ *For data and notes refer type* 6BE7.	32	G_2 G_4 G_6	G_3	K G_7	H	H	A	G_1	K G_7	G_5	—	—	**UQ80**
—	—	—	★ *For data and notes refer type* CY2.	23	K''	H	H	K'	A'	NC	A''	—	—	—	—	**UR3C**
—	—	—	★ *For data and notes refer type* UY21.	30	H_1	NC	A	NC	H_2	NC	K	H_2	—	—	—	**UY1N**
—	—	—	★ *For data and notes refer type* UY21.	27	NC	K	NC	NC	H	H	NC	A	—	—	—	**UY11**
—	—	—	Condenser Input to Filter 60 μF maximum. Plate Supply Impedance = 175 Ω minimum.	29	H	A	NC	A	NC	A	K	H	—	—	—	**UY21**
—	—	—		30	NC	H	NC	NC	A	NC	H	K	—	—	—	**UY31**
—	—	—	Condenser Input to Filter 50 μF maximum. Plate Supply Impedance = 210 Ω minimum.	28	H	A	NC	IC	NC	IC	K	H	—	—	—	**UY41**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA			Plate voltage	Plate current	Grid bias (approx.)	Screen voltage	Screen current	Mutual conductance	Amplification factor	Plate resistance
			TYPE	Voltage Volts	Current Amps	Volts	Milliamps	Volts	Volts	Milliamps	µmhos		Megohms
UY42	**HALF-WAVE VACUUM RECTIFIER**	Half-wave Rectifier	H	31·0	0·1	Max. R.M.S. 110	D.C. Output 100 Max.	—	—	—	—	—	—
UY82	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	55	0·1	★	★	—	—	—	—	—	—
UY85	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	38	0·1	★	★	—	—	—	—	—	—
UY92	**HALF-WAVE VACUUM RECTIFIER**	Rectifier	H	26	0·1	R.M.S. 145 (max.)	70 (max.)	—	—	—	—	—	—
V99	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	3·0	0·06	★	★	★	—	—	★	★	★
VR75/30	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	★	★	—	—	—	—	—	—
VR105/30	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	★	★	—	—	—	—	—	—
VR150/30	**VOLTAGE REGULATOR**	Voltage Regulator	COLD	—	—	★	★	—	—	—	—	—	—
W76	**REMOTE CUT-OFF R.F. PENTODE**	R.F. Amplifier	H	13·0	0·16	250	7·6	−3	100	1·9	1500	—	—
W107	**REMOTE CUTOFF R.F. PENTODE**	R.F. Amplifier	H	12·6	0·1	200	8·0	−2·6	200	2·0	2500	—	0·5
X61M	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·3	250	3·7	(G_1h) −3	100	2·8	Conv. 620	—	—
X76M	**TRIODE HEXODE**	Frequency Converter	H	13·0	0·16	250	3·8	(G_1h) −3	100	3·0	Conv. 620	—	0·7

Load resistance Ohms	Power output Watts	Grid-plate capacitance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.C.	TYPE No.
—	—	—	Condenser Input to Filter 50 μF maximum.	28	H	A	NC	IC	NC	IC	K	H	—	—	—	**UY42**
—	—	—	★ *For data and notes refer type* 19Y3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**UY82**
—	—	—	★ *For data and notes refer type* 38A3.	32	IC	IC	K	H	H	IC	IC	IC	A	—	—	**UY85**
—	—	—	Maximum Filter Input Capacity 100 μF. Peak Inverse Plate Voltage 400 max.	21	IC	IC	H	H	A	IC	K	—	—	—	—	**UY92**
—	—	3·3	★ *For data and notes refer type* 99.	9	G_1	F+	A	F−	—	—	—	—	—	—	—	**V99**
—	—	—	★ *For data and notes refer type* OA3.	30	NC	K	J	—	A	—	J	NC	—	—	—	**VR75/30**
—	—	—	★ *For data and notes refer type* OC3.	30	NC	K	J	—	A	—	J	NC	—	—	—	**VR105/30**
—	—	—	★ *For data and notes refer type* OD3.	30	NC	K	J	—	A	—	J	NC	—	—	—	**VR150/30**
—	—	0·007	Cathode Resistor for Self-bias 330 Ω.	30	S	H	A	G_2	G_3	—	H	K IS	—	G_1	—	**W76**
—	—	0·006	Cathode Resistor 270 Ω.	21	G_1	K	H	H	A	G_3	G_2	—	—	—	—	**W107**
—	—	0·085	Conversion Conductance = 5 μmhos at − 25 volts Grid ($G_1{}^h$) Bias. Osc. Plate Current 3·5 mA through 30,000 Ω (250 V. supply). Optimum Osc. Grid Voltage = 15 V. peak.	30	S	H	A^h	$G_2{}^h$ $G_3{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**X61M**
—	—	0·085	Conversion Conductance = 5 μmhos at − 25 volts Grid ($G_1{}^h$) Bias. Osc. Plate Current 3·6 mA through 30,000 Ω (250 V. supply). Optimum Osc. Grid Voltage = 15 V. peak.	30	S	H	A^h	$G_2{}^h$ $G_4{}^h$	$G_1{}^t$ $G_3{}^h$	A^t	H	K	—	$G_1{}^h$	—	**X76M**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms
X79	**TRIODE HEXODE**	Frequency Converter	H	6·3	0·3	★	★	★	★	★	★	—	★
X81	**TRIODE HEPTODE**	Frequency Converter	H	6·3	0·3	250	1·8	−2·0	100	3·0	Conv. 525	—	1·25
X99	**DETECTOR AMPLIFIER TRIODE**	A.F. Amplifier and Biased Detector	F	3·0	0·06	★	★	★	—	—	★	★	★
Y61	**TUNING INDICATOR with TRIODE**	Tuning Indicator	H	6·3	0·3	Target Volts 250	Target Current 4·0	0 for Shadow Angle 90°	—	—	—	—	—
Z66	**R.F. PENTODE**	R.F. Amplifier	H	6·3	0·63	200	8·0	−1·85	200	2·0	7500	—	1·5

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	T.C.	B.S.	TYPE No.
—	—	0·11	★ *For data and notes refer type* 6AE8.	32	G_2^h G_4^h	G_1^h	K	H	H	A^h	G_3^h G_1^t	A^t	IC	—	—	**X79**
—	—	Triode 1·0 Heptode 0·1	Triode Plate Voltage 250 Triode Plate Current 5·0 mA. Triode Plate Resistor 20 kΩ. Cathode Resistor 195 Ω. Triode grid (G_1^t) and, Heptode grid (G_3^h) resistor 0·05 mΩ.	29	H	A^h	A^t	G_2^h G_1^t	G_2^h G_4^h	G_1^h	K G_5^h IS	H	—	—	S	**X81**
—	—	3·3	★ *For data and notes refer type* 99.	8	F+	A	G_1	F−	—	—	—	—	—	—	—	**X99**
—	—	—	Triode Plate Resistor 0·5 meg. Triode Plate Current 0·19 mA. Grid Bias − 8 volts for shadow angle. 0°.	30	NC	H	A^t	T	G_1^t	—	H	K	—	—	—	**Y61**
—	—	0·006	Cathode Resistor 180 Ω.	30	NC	H	A	G_2	G_3	—	H	K	G_1	—	—	**Z66**

TYPE No.	DESCRIPTION	DATA WHEN USED AS	CATHODE DATA TYPE	CATHODE DATA Voltage Volts	CATHODE DATA Current Amps	Plate voltage Volts	Plate current Milliamps	Grid bias (approx.) Volts	Screen voltage Volts	Screen current Milliamps	Mutual conductance μmhos	Amplification factor	Plate resistance Megohms

TECHNICAL DATA

Load resist-ance Ohms	Power output Watts	Grid-plate capaci-tance $\mu\mu F$	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS											TYPE No.
					1	2	3	4	5	6	7	8	9	T.C.	B.S.	

TYPE No.	Nominal screen size (diagonal) Ins.	Defl. angle Deg.	Focus	Metal Backing	Ion trap magnet	Heater voltage Volts	Heater current Amps	Final Anode voltage Volts	Focusing Electrode voltage Volts	Grid (G_2) voltage Volts	Grid (G_1) voltage for extinction of raster Volts	CAPACITY $\mu\mu$F. Cathode input	CAPACITY $\mu\mu$F. Min. external dag
A43-64	17	70	M	No	Yes	6·3	0·3	14000	—	300	−38 to −87	5·0	1100
AME1950PB	19	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−30 to −72	5·5	1500
AME1951B	19	114	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−30 to −72	5·5	1500
AME1953B	19	114	E	Yes	No	12·6	0·3	16000	(G_4) 0 to +400	300	−30 to −72	5·5	1500
AME2350PB	23	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−30 to −72	5·5	2000
AME2351B	23	114	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +300	300	−30 to −72	5·0	2000
AME2352B	23	110	E	Yes	No	12·6	0·3	16000	(G_4) 0 to +400	300	−30 to −72	5·5	2000
AME2354B	23	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−30 to −72	5·5	2000
AW36-80	14	90	E	Yes	Yes	6·3	0·3	12000	(G_3, G_5) −70 to +230	300	−35 to −75	4·0	500
AW43-20	17	70	E	Yes	No	6·3	0·3	14000	0 to +400	300	−33 to −77	5·0	750
AW43-80	17	90	E	Yes	Yes	6·3	0·3	16000	(G_3, G_5) −75 to +235	300	−35 to −75	4·0	900
AW43-88	17	110	E	Yes	No	6·3	0·3	16000	(G_4) 0 to +400	300	−30 to −72	4·0	700
AW47-30	19	114	E	Yes	No	6·3	0·3	16000	(G_4) 0 to +400	300	−30 to −72	4·0	700
AW53-80	21	90	E	Yes	Yes	6·3	0·3	16000	(G_3, G_5) −75 to +235	300	−35 to −75	4·0	1250
AW53-88	21	110	E	Yes	No	6·3	0·3	16000	(G_4) 0 to +400	300	−30 to −72	4·0	1200

PICTURE TUBES

Maximum heater-cathode voltage (cathode positive) Volts	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	10	11	12	Cap.	TYPE No.
200	Type A43-64A is identical, additionally having a metal backed screen.	55	H	G_1	—	—	—	NC	—	—	—	G_2	K	H	A G_3	**A43-64**
180	Twin Panel Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AME1950PB**
180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AME1951B**
180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AME1953B**
180	Twin Panel Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AME2350PB**
180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AME2351B**
180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AME2352B**
180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AME2354B**
200		55	H	G_1	—	—	—	G_3 G_5	NC	—	—	G_2	K	H	A G_4 G_6	**AW36-80**
200		55	H	G_1	—	—	—	G_4	NC	—	—	G_2	K	H	A G_3	**AW43-20**
200		55	H	G_1	—	—	—	G_3 G_5	NC	—	—	G_2	K	H	A G_4 G_6	**AW43-80**
200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AW43-88**
200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AW47-30**
200		55	H	G_1	—	—	—	G_3 G_5	NC	—	—	G_2	K	H	A G_4 G_6	**AW53-80**
200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AW53-88**

TYPE No.	Nominal screen size (diagonal) Ins.	Defl. angle Deg.	Focus	Metal Backing	Ion trap magnet	Heater voltage Volts	Heater current Amps	Final Anode voltage Volts	Focusing Electrode voltage Volts	Grid (G_2) voltage Volts	Grid (G_1) voltage for extinction of raster Volts	CAPACITY $\mu\mu$F. Cathode input	CAPACITY $\mu\mu$F. Min. external dag
AW59-30	23	114	E	Yes	No	6·3	0·3	16000	(G_4) 0 to +400	300	−30 to −72	4·0	1200
AW59-90	23	110	E	Yes	No	6·3	0·3	16000	(G_4) 0 to +400	300	−30 to −72	4·0	1200
CME1704	17	110	E	Yes	No	6·3	0·6	14000	(G_4) 0 to +400	300	−30 to −72	5·0	1700 Av.
CME2101	21	110	E	Yes	No	12·6	0·3	16000	(G_4) 0 to +400	300	−30 to −72	5·0	2000 Av.
CME2102	21	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−30 to −72	5·0	2000 Av.
CME2302	23	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−30 to −72	5·5	2000
CRM171	17	70	M	Yes	Yes	12·6	0·3	16000	—	300	−30 to −72	6·5	None
CRM172	17	70	M	Yes	Yes	12·6	0·3	16000	—	300	−30 to −72	6·5	1400 Av.
CRM211	21	70	M	Yes	Yes	12·6	0·3	18000	—	300	−30 to −72	6·5	700 Av.
CRM212	21	90	M	Yes	Yes	12·6	0·3	18000	—	300	−30 to −72	6·5	700 Av.
MW43-64	17	70	M	No	Yes	6·3	0·3	14000	—	300	−35 to −81	5·0	1100 Av.
MW43-69	17	70	M	Yes	Yes	6·3	0·3	14000	—	300	−35 to −81	5·0	1100 Av.
MW53-20	21	70	M	Yes	Yes	6·3	0·3	16000	—	300	−35 to −75	5·0	700
MW53-21	21	70	M	No	Yes	6·3	0·3	16000	—	300	−35 to −75	5·0	1500
MW53-80	21	90	M	Yes	Yes	6·3	0·3	16000	—	300	−35 to −75	4·0	1250

PICTURE TUBES

Maximum heater-cathode voltage (cathode positive) Volts	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	10	11	12	Cap.	TYPE No.
200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AW59-30**
200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**AW59-90**
180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**CME1704**
180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**CME2101**
180	Type CME2102H is identical except for physical differences in the bulb.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**CME2102**
180	Twin panel faceplate. This type now designated AME2350PB.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**CME2302**
180		55	H	G_1	—	—	—	—	—	—	—	G_2	K	H	A G_3	**CRM171**
180		55	H	G_1	—	—	—	—	—	—	—	G_2	K	H	A G_3	**CRM172**
180		55	H	G_1	—	—	—	—	—	—	—	G_2	K	H	A G_3	**CRM211**
180		55	H	G_1	—	—	—	—	—	—	—	G_2	K	H	A G_3	**CRM212**
200	Prefocusing electrode (G_3) voltage 0, 250.	55	H	G_1	—	—	—	NC	G_3	—	—	G_2	K	H	A G_4	**MW43-64**
200	Prefocusing electrode (G_3) voltage 0, 250.	55	H	G_1	—	—	—	NC	G_3	—	—	G_2	K	H	A G_4	**MW43-69**
200	Prefocusing electrode (G_3) voltage 0, 300.	55	H	G_1	—	—	—	NC	G_3	—	—	G_2	K	H	A G_4	**MW53-20**
200	Prefocusing electrode (G_3) voltage 0, 300.	55	H	G_1	—	—	—	NC	G_3	—	—	G_2	K	H	A G_4	**MW53-21**
200	Prefocusing electrode (G_3) voltage 0, 300.	55	H	G_1	—	—	—	NC	G_3	—	—	G_2	K	H	A G_4	**MW53-80**

TYPE No.	Nominal screen size (diagonal) Ins.	Defl. angle Deg.	Focus	Metal Backing	Ion trap magnet	Heater voltage Volts	Heater current Amps	Final Anode voltage Volts	Focusing Electrode voltage Volts	Grid (G_2) voltage Volts	Grid (G_1) voltage for extinction of raster Volts	CAPACITY $\mu\mu$F. Cathode input	Min. external dag
5-3T	17	70	E	Yes	No	8·5	0·3	17000	800	450	−42	5·0	1800
14ASP4	14	110	E	Yes	No	6·3	0·6	12000	(G_4) −50 to +350	300	−28 to −72	5·0	500
14RP4	14	90	E	No	Yes	6·3	0·6	10000	(G_4) −50 to +350	300	−26 to −70	5·0	500
14RP4-A	14	90	E	Yes	Yes	6·3	0·6	10000	(G_4) −50 to +350	300	−26 to −70	5·0	500
14WP4	14	90	E	Yes	No	6·3	0·6	12000	(G_4) −50 to +350	300	−28 to −72	5·0	800
17AVP4	17	90	E	No	Yes	6·3	0·6	14000	(G_4) −55 to +310	300	−28 to −72	5·0	1000
17AVP4-A	17	90	E	Yes	Yes	6·3	0·6	14000	(G_4) −55 to +310	300	−28 to −72	5·0	1000
17BJP4	17	90	E	Yes	No	6·3	0·6	14000	(G_4) −50 to +350	300	−28 to −72	5·0	1000
17BP4-B	17	70	M	Yes	Yes	6·3	0·6	14000	—	300	−28 to −72	5·0	750
17BZP4	17	110	E	Yes	No	6·3	0·6	14000	(G_4) 0 to 400	300	−28 to −72	5·0	800
17CGP4	17	70	E	Yes	No	6·3	0·6	14000	(G_4) −50 to +350	300	−28 to −72	5·0	750
17HP4	17	70	E	No	Yes	6·3	0·6	14000	(G_4) 0 to +350	300	−28 to −72	5·0	750
17HP4-B	17	70	E	Yes	Yes	6·3	0·6	14000	(G_4) 0 to +350	300	−28 to −72	5·0	750
19AFP4	19	114	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−35 to −72	5·0	1000
19AKP4	19	114	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−35 to −72	5·0	1000
19ARP4	19	114	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−35 to −72	5·0	1000

Maximum heater-cathode voltage (cathode positive) Volts	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	10	11	12	Cap.	TYPE No.
200		56	G_3	G_2 G_4	G_1	IC	H	K	H	—	—	—	—	—	A	**5-3T**
Peak 180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**14ASP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**14RP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**14RP4-A**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**14WP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**17AVP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**17AVP4-A**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**17BJP4**
Peak 150		55	H	G_1	—	—	—	NC	—	—	—	G_2	K	H	A G_3	**17BP4-B**
Peak 180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**17BZP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**17CGP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**17HP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**17HP4-B**
Peak 200	Twin Panel Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**19AFP4**
200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**19AKP4**
Peak 200	Twin Panel Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**19ARP4**

TYPE No.	Nominal screen size (diagonal) Ins.	Defl. angle Deg.	Focus	Metal Backing	Ion trap magnet	Heater voltage Volts	Heater current Amps	Final Anode voltage Volts	Focusing Electrode voltage Volts	Grid (G_2) voltage Volts	Grid (G_1) vo'tage for extinction of raster Volts	CAPACITY $\mu\mu$F. Cathode input	CAPACITY $\mu\mu$F. Min. external dag
19XP4	19	114	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	400	−36 to −94	5·0	1000
21ALP4-A **21ALP4-B**	21	90	E	Yes	Yes	6·3	0·6	16000	(G_4) −65 to +350	300	−28 to −72	5·0	500
21ATP4	21	90	E	Yes	Yes	6·3	0·6	16000	(G_4) −65 to +350	300	−28 to −72	5·0	1200
21CBP4 **21CBP4-A**	21	90	E	Yes	No	6·3	0·6	16000	(G_4) −50 to +350	300	−28 to −72	5·0	2000
21CEP4	21	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	400	−36 to −94	5·0	2000
21DAP4	21	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	400	−36 to −94	5·0	2000
21DEP4	21	110	E	Yes	No	6·3	0·6	17000	(G_4) 0 to +400	300	−35 to −72	5·0	2000
21ZP4A	21	70	M	No	Yes	6·3	0·6	16000	—	300	−28 to −72	5·0	500
21ZP4B	21	70	M	Yes	Yes	6·3	0·6	16000	—	300	−28 to −72	5·0	500
23ARP4	23	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−35 to −72	5·0	2000
23AVP4	23	110°	E	Yes	No	6·3	0·6	18000	(G_4) 0 to +400	400	−42 to −78	5·0	1000
23CP4	23	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−35 to −72	5·0	2000
23CRP4	23	110°	E	Yes	No	6·3	0·3	16000	(G_4) 0 to +400	300	−30 to −72	4·0	1200
23HP4	23	110	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−35 to −72	5·0	2000
23MP4	23	114	E	Yes	No	6·3	0·6	18000	(G_4) 0 to +400	400	−36 to −94	5·0	1700
23MP4J	23	110	E	Yes	No	6·3	0·6	18000	(G_4) 0 to +400	400	−36 to −94	5·0	1700

PICTURE TUBES

Maximum heater-cathode voltage (cathode positive) Volts	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	10	11	12	Cap.	TYPE No.
Peak 200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**19XP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**21ALP4-A** **21ALP4-B**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**21ATP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**21CBP4** **21CBP4-A**
Peak 180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**21CEP4**
Peak 180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**21DAP4**
200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**21DEP4**
Peak 180		55	H	G_1	—	—	—	NC	—	—	—	G_2	K	H	A G_3	**21ZP4A**
Peak 180		55	H	G_1	—	—	—	NC	—	—	—	G_2	K	H	A G_3	**21ZP4B**
Peak 200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23ARP4**
Peak 180	Twin Panel Anti-glare Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23AVP4**
Peak 180	Twin Panel Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23CP4**
200	Twin Panel Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23CRP4**
Peak 180	Twin Panel Faceplate.	66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23HP4**
Peak 200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23MP4**
Peak 200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23MP4J**

TYPE No.	Nominal screen size (diagonal) Ins.	Defl. angle Deg.	Focus	Metal Backing	Ion trap magnet	Heater voltage Volts	Heater current Amps	Final Anode voltage Volts	Focusing Electrode voltage Volts	Grid (G_2) voltage Volts	Grid (G_1) voltage for extinction of raster Volts	CAPACITY $\mu\mu$F. Cathode input	CAPACITY $\mu\mu$F. Min. external dag
23WP4	23	114	E	Yes	No	6·3	0·6	16000	(G_4) 0 to +400	300	−35 to −72	5·0	2000
24AEP4	24	90	E	Yes	No	6·3	0·6	18000	(G_4) −50 to +350	300	−28 to −72	5·0	2000
24AHP4	24	110	E	Yes	No	6·3	0·6	16000	(G_4) −50 to +350	300	−28 to −72	5·0	2000
24DP4-A	24	90	E	Yes	Yes	6·3	0·6	18000	(G_4) −72 to + 400	300	−28 to −72	5·0	2000
27SP4	27	90	E	Yes	Yes	6·3	0·6	18000	(G_4) −72 to +396	300	−28 to −72	5·0	500
27VP4	27	90	E	Yes	No	6·3	0·6	18000	(G_4) −50 to +350	300	−28 to −72	5·0	500

Maximum heater-cathode voltage (cathode positive) Volts	ADDITIONAL DATA AND NOTES	Base Fig.	PIN CONNECTIONS 1	2	3	4	5	6	7	8	9	10	11	12	Cap.	TYPE No.
Peak 200		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**23WP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**24AEP4**
Peak 180		66	H	G_1	G_2	G_4	—	G_1	K	H	—	—	—	—	A G_3 G_5	**24AHP4**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**24DP4-A**
Peak 180		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**27SP4**
200		55	H	G_1	—	—	—	G_4	—	—	—	G_2	K	H	A G_3 G_5	**27VP4**

TYPE No.	DESCRIPTION	Material	MAXIMUM RATINGS AT 25°C Peak Inverse Voltage V	Continuous Operating Inverse Voltage V	Peak Rectified Current mA.	Average Rectified Current mA.	Surge Current for Amps	Duration secs.
IN34A	**GENERAL PURPOSE**	Germanium	—	60	150	50	0·5	1·0
IN66	**GENERAL PURPOSE**	Germanium	—	60	150	50	0·5	1·0
IN67	**GENERAL PURPOSE**	Germanium	—	80	100	35	0·5	1·0
IN294	**GENERAL PURPOSE**	Germanium	—	60	150	50	0·5	1·0
IN295	**GENERAL PURPOSE**	Germanium	—	40	125	35	0·3	1·0
IN440B	**POWER RECTIFIER**	Silicon	100	100	3·5A	750 at 50°C	15	One cycle at 60 cps.
IN1169	**POWER RECTIFIER**	Silicon	400	400	—	520 at 100°C	—	—
IN1763	**POWER RECTIFIER**	Silicon	400	—	5·0A at 75°C	500 at 75°C	35 at 75°C	0·002
IN1764	**POWER RECTIFIER**	Silicon	500	—	5·0A at 75°C	500 at 75°C	35 at 75°C	0·002
IN2091	**POWER RECTIFIER**	Silicon	100	100	5·0A	500 at 85°C	minimum surge limiting resistor 5Ω	
IN2094	**POWER RECTIFIER**	Silicon	400	400	5·0A	500 at 85°C	minimum surge limiting resistor 5Ω	
IN2095	**POWER RECTIFIER**	Silicon	500	500	5·0A	500 at 85°C	minimum surge limiting resistor 10Ω	
BA100	**GENERAL PURPOSE**	Silicon	—	60	100	90	0·2	1·0
BA102	**VOLTAGE-DEPENDENT CAPACITOR**	Silicon	Capacitance at $-V_D = 4$ volts, freq. $= 0{\cdot}5$ Mc/s...45 μμF max. Capacity ratio at 0·5 Mc/s. $\frac{C_D \text{ at } -V_D = 10V}{C_D \text{ at } -V_D = 4V}$....0·7					

GERMANIUM AND SILICON DIODES

TYPICAL CHARACTERISTICS AT 25°C.				ADDITIONAL DATA AND NOTES	TYPE No.
Forward Current (min.) at mA.	Forward Voltage V	Reverse Current (max.) at µA	Inverse Voltage V		
5·0 —	1·0 —	30 500	10 50		**IN34A**
5·0 —	1·0 —	50 800	10 50	White band indicates cathode end.	**IN66**
4·0 —	1·0 —	5·0 50	5·0 50	White band indicates cathode end.	**IN67**
5·0 —	1·0 —	10 800	10 50	White band indicates cathode end.	**IN294**
—	—	200	10	White band indicates cathode end.	**IN295**
750 at 50°C	1·5	0·3	100	Cathode connected to base.	**IN440B**
—	—	500	400		**IN1169**
15·0A	3·0	100	400	As full-wave voltage doubler: R.M.S. supply voltage = 117. Filter input capacitor (each) = 100 µF. Total effective surge-limiting resistance = 5·6Ω. D.C. output voltage at filter input:— at half load 250 mA. ....280 V. at full load 500 mA. ....260 V. Cathode connected to case.	**IN1763**
15·0A	3·0	100	500	Cathode connected to case.	**IN1764**
500 at 85°C	0·5	250	100 at 85°C		**IN2091**
500 at 85°C	0·5	250	400 at 85°C		**IN2094**
500 at 85°C	0·5	250	500 at 85°C		**IN2095**
1·0 30	1·0 1·5	10·0 20 at 75°C	10·0 60	White band indicates cathode end.	**BA100**
—	—	5 at 80°C	20	White band indicates cathode end.	**BA102**

TYPE No.	DESCRIPTION	Material	MAXIMUM RATINGS AT 25°C Peak Inverse Voltage V	Continuous Operating Inverse Voltage V	Peak Rectified Current mA.	Average Rectified Current mA.	Surge Current for Amps	Duration secs.
BY100	**POWER RECTIFIER**	Silicon	800 (see note)	—	5·0A	550 at 50°C	—	—
CK935	**POWER RECTIFIER**	Silicon	400	—	5·0A at 75°C	500 at 75°C	35 at 75°C	0·002
F4	**POWER RECTIFIER**	Silicon	400	—	5·0A at 100°C	500 at 100°C	75 at 100°C	0·004
FST1/4	**POWER RECTIFIER**	Silicon	400	—	5·25A	500 at 50°C	35	0·005
GD3	**VIDEO DETECTOR**	Germanium	25	—	100	30	—	—
GD4	**GENERAL PURPOSE**	Germanium	50	—	100	30	—	—
GD5	**GENERAL PURPOSE**	Germanium	85	—	100	30	—	—
GD6	**RATIO DETECTOR**	Germanium	70	70	150	50	—	—
GD8	**HIGH BACK RESISTANCE**	Germanium	85	75	100	30	—	—
GD9	**SERIES INTERFERENCE LIMITER**	Germanium	125	100	100	50	—	—
GD10	**SHUNT INTERFERENCE LIMITER**	Germanium	150	120	80	40	—	—
GD11	**HIGH LEVEL DETECTOR**	Germanium	50	40	200	100	—	—
GD12	**VIDEO DETECTOR**	Germanium	25	—	80	40	—	—
GEX34	**HIGH BACK RESISTANCE**	Germanium	Effective R.F. Turnover Voltage 60 min.	—	100	30	0·5	—
GEX35	**GENERAL PURPOSE**	Germanium	Turnover Voltage 30 min.	—	100	30	0·5	—

GERMANIUM AND SILICON DIODES

TYPICAL CHARACTERISTICS AT 25°C.				ADDITIONAL DATA AND NOTES	TYPE No.
Forward Current (min.) at mA.	Forward Voltage V	Reverse Current (max.) at µA	Inverse Voltage V		
5·0A	1·5	10	1250	Withstands transient inverse voltages of 1250 V. for 10 msec. duration.	**BY100**
15·0A	3·0	100	400	Cathode connected to case.	**CK935**
—	—	—	—		**F4**
500 at 50°C	1·1	—	—		**FST1/4**
3	1·0	200	10	Shunt capacitance = 1·0 µµF. Red marking indicates cathode end.	**GD3**
3	1·0	40	10	Shunt capacitance = 1·0 µµF. For use as video detector or noise limiter. Red marking indicates cathode end.	**GD4**
3	1·0	100	30	Shunt capacitance = 1·0 µµF. For use in high impedance detector or limiter circuits. Red marking indicates cathode end.	**GD5**
4	1·0	1000	50	Shunt capacitance = 1·0 µµF.	**GD6**
3	1·0	100	50	Shunt capacitance = 1·0 µµF.	**GD8**
6	1·0	75	50	Shunt capacitance = 1·5 µµF.	**GD9**
5	1·0	200	100	Shunt capacitance = 1·8 µµF.	**GD10**
10	1·0	—	—	Shunt capacitance = 2·0 µµF.	**GD11**
5	1·0	—	—	Shunt capacitance = 1·0 µµF.	**GD12**
1·0	1·0	50	10	Shunt capacitance = 0·9 µµF. Red marking indicates cathode end.	**GEX34**
1·0	1·0	100	10	Shunt capacitance = 0·9 µµF. Red marking indicates cathode end.	**GEX35**

TYPE No.	DESCRIPTION	Material	MAXIMUM RATINGS AT 25°C Peak Inverse Voltage V.	Continuous Operating Inverse Voltage V.	Peak Rectified Current m.A.	Average Rectified Current m.A.	Surge Current for Amps	Duration secs.
GEX39	**GENERAL PURPOSE**	Germanium	—	—	100	30	0·5	—
GEX45/1	**GENERAL PURPOSE**	Germanium	Turnover Voltage 75 min.	—	100	30	0·5	—
GEX54	**HIGH BACK RESISTANCE**	Germanium	Turnover Voltage 100 min.	—	100	30	0·5	—
GEX54/3	**GENERAL PURPOSE**	Germanium	Turnover Voltage 120 min.	—	100	30	0·5	—
HR25	**POWER RECTIFIER**	Silicon	500	500	—	500 at 75°C	35	0·02
OA70	**VIDEO DETECTOR**	Germanium	22·5	15	150	50	0·4	1·0
OA72	**HIGH BACK RESISTANCE**	Germanium	45	30	100	35	0·2	1·0
OA74	**GENERAL PURPOSE**	Germanium	60	40	150	35	0·2	1·0
OA79	**HIGH BACK RESISTANCE**	Germanium	45	30	100	35	0·2	1·0
OA80	**VIDEO DETECTOR**	Germanium	30	20	45	10	0·2	1·0
OA81	**HIGH BACK RESISTANCE**	Germanium	115	90	150	50	0·5	1·0
OA85	**HIGH BACK RESISTANCE**	Germanium	115	90	150	50	0·5	1·0
OA90	**VIDEO DETECTOR**	Germanium	30	20	45	10	0·2	1·0
OA91	**GENERAL PURPOSE**	Germanium	115	90	150	50	0·5	1·0

GERMANIUM AND SILICON DIODES

TYPICAL CHARACTERISTICS AT 25°C.				ADDITIONAL DATA AND NOTES	TYPE No.
Forward Current (min.) at mA.	Forward Voltage V	Reverse Current (max.) at μA	Inverse Voltage V		
15	1·0	100	**10**	Shunt capacitance = 0·9 μμF. Red marking indicates cathode end.	**GEX39**
4·0	1·0	1000	**50**	Shunt capacitance = 0·9 μμF. Red marking indicates cathode end.	**GEX45/1**
3·0 —	1·0 —	10 100	**10** **50**	Shunt capacitance = 0·9 μμF. Red marking indicates cathode end	**GEX54**
3·0 —	1·0 —	6 625	**3** **100**	Shunt capacitance = 0·9 μμF. Red marking indicates cathode end.	**GEX54/3**
—	—	100	**500**		**HR25**
0·1	0·25	30	**1·5**	Shunt capacitance = 1·0 μμF. White band indicates cathode end.	**OA70**
10 typ. **30 typ.** —	**1·4** **2·4** —	**0·8 typ.** **4·5 typ.** **50 typ.**	**1·5** **10** **30**	White band indicates cathode end. Matched pairs type 2-OA72 are suitable for discriminator circuits.	**OA72**
4 **30**	**1·05** **3·5**	25 200	**10** **40**	White band indicates cathode end.	**OA74**
0·1 10 — 30 —	0·3 2·2 — 4·0 —	1·0 2·8 18 150 350	**0·1** **1·5** **10** **30** **45**	White band indicates cathode end. Matched pairs type 2-OA79 are suitable for discriminator circuits.	**OA79**
0·1 10 30 —	0·25 1·5 3·2 —	10 135 450 1100	1·5 10 20 30	White band indicates cathode end. Maximum ratings referred to 75°C ambient temperature.	**OA80**
0·1 10 30	0·25 1·9 3·3	11 180 275	10 75 100	White band indicates cathode, end.	**OA81**
0·1 10 30	0·25 1·5 2·6	7 110 250	10 75 100	White band indicates cathode end.	**OA85**
0·1 10 30 —	0·25 1·5 3·2 —	10 135 450 1100	1·5 10 20 30	White band indicates cathode end. Maximum ratings referred to 75°C ambient temperature.	**OA90**
10 —	1·9 —	11 275	10 100	White band indicates cathode end.	**OA91**

TYPE No.	DESCRIPTION	Material	MAXIMUM RATINGS AT 25°C					
			Peak Inverse Voltage V	Continuous Operating Inverse Voltage V	Peak Rectified Current mA.	Average Rectified Current mA.	Surge Current for Amps	Duration secs.
OA95	**GENERAL PURPOSE**	Germanium	115	90	150	50	0·5	1·0
OA210	**POWER RECTIFIER**	Silicon	400	—	5·0A at 70°C	500 at 70°C	Minimum total external surge limiting resistance required 4Ω	
OA211	**POWER RECTIFIER**	Silicon	800*	—	4·0* A	400*	Minimum total external surge limiting resistance required 8Ω	
OA214	**POWER RECTIFIER**	Silicon	700*	—	5·0* A	500*	Minimum total external surge limiting resistance required 7Ω	
SD94	**POWER RECTIFIER**	Silicon	400	—	—	550 at 50°C	—	—
SFD106	**VIDEO DETECTOR**	Germanium	25	25	90	30	0·35	1·0
SFD108	**GENERAL PURPOSE**	Germanium	115	100	90	30	0·3	1·0
SFD110	**GENERAL PURPOSE**	Germanium	45	45	90	30	0·3	1·0

GERMANIUM AND SILICON DIODES

TYPICAL CHARACTERISTICS AT 25°C.				ADDITIONAL DATA AND NOTES	TYPE No.
Forward Current (min.) at mA.	Forward Voltage V	Reverse Current (max.) at µA	Inverse Voltage V		
10 —	1·5 —	7 250	10 100	White band indicates cathode end.	**OA95**
500 typ. at 125°C T_{mb}	1·05	45 typ. at 125°C T_{mb}	400	Cathode connected to case. As full-wave voltage doubler: R.M.S. supply voltage = 127 V. Charge capacitors (each unit) = 200 µF. Total effective surge-limiting resistance = 4Ω. D.C. output voltage 311 volts for output current 350 mA.	**OA210**
400 typ. at 125°C T_{mb}	1·0	15 typ. at 125°C T_{mb}	800	Cathode connected to case. *Heat sink 0·775 sq. ins. minimum at 60°C.	**OA211**
500 typ. at 125°C T_{mb}	1·05	65 typ. at 125°C T_{mb}	700	Cathode connected to case. *Heat sink 0·775 sq. ins. minimum at 70°C.	**OA214**
—	—	800 at 100°C	400		**SD94**
1·0 30	0·4 2·7	10 200	2 25	Grey dot indicates cathode end.	**SFD106**
1·0 30	0·45 2·9	3·2 250	1·0 100	Orange dot indicates cathode end.	**SFD108**
1·0 30	0·45 2·1	21 350	10 45	Orange dot indicates cathode end.	**SFD110**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$ V	$-I_C$ mA Peak	$-I_C$ mA Average	$-V_{EB}$ V	P_C at 25°C Ambient mW
2N109	PNP AUDIO POWER AMPLIFIER	25	150	—	12	150
2N139	PNP I.F. AMPLIFIER	16	—	15	12	80
2N140	PNP CONVERTER	16	—	15	12	80
2N175	PNP AUDIO AMPLIFIER	10	—	2	10	50
2N176	PNP AUDIO POWER AMPLIFIER	Peak 40	3A	—	—	10W at $T_{mb} = 80°C$
2N185	PNP AUDIO POWER AMPLIFIER	$-V_{CE}$ 20	—	150	—	150
2N217	PNP AUDIO POWER AMPLIFIER	25	150	—	12	150
2N218	PNP I.F. AMPLIFIER	16	—	15	12	80
2N219	PNP CONVERTER	16	—	15	12	80
2N220	PNP AUDIO AMPLIFIER	10	—	2	10	50
2N247	PNP R.F. AMPLIFIER	35	—	10	1·0	80
2N250	PNP AUDIO AMPLIFIER	30	—	3A	—	25W
2N251	PNP AUDIO POWER AMPLIFIER	60	—	3A	—	25W

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ μA		h_{fe} or $[h_{FE}]$		$f_{\alpha b}$ or $\{f_1\}$			
$-V_{CE}$ or $(-V_{CB})$ V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			
(25) 1·0	(0) 50	—	14	[75]	— —		As Class "B" push-pull output stage with $V_s = -9V$: Load resistance per collector $= 200\Omega$. Power output $=$ 160mW.	58	**2N109**
(12) 9·0 (9·0)	(0) 1·0 1·0	—	6·0	48	— —	4·7		58	**2N139**
(12) 9·0 (9·0)	(0) 0·6 0·6	—	6·0	48	— —	7·0	As self-excited converter at 1 Mc/s: $V_{CE} = -9V$. $I_E = 0{\cdot}6mA$. R.M.S. base to emitter oscillator injection voltage $=$ 100mV.	58	**2N140**
4·0 (4·0)	0·5 0·5			65	— —	0·85		58	**2N175**
(30) 2·0	(0) 500	—	3mA	[63]	— —		As Class "A" power amplifier with $V_s = -14{\cdot}4V$: Load resistance $= 25\Omega$. Power output $=$ 2W.	62	**2N176**
(10) 0·5	(0) 100	—	10	[55]	[30] —		As Class "B" push-pull output stage with $V_s = -9V$: Collector to collector load resistance $= 375\Omega$. Power output $=$ 300mW.	70	**2N185**
(25) 1·0	(0) 50	—	14	[75]	— —		Physically different only to type 2N109.	59	**2N217**
(12) 9·0 (9·0)	(0) 1·0 1·0	—	6·0	48	— —	4·7	Physically different only to type 2N139.	59	**2N218**
(12) 9·0 (9·0)	(0) 0·6 0·6	—	6·0	48	— —	7·0	Physically different only to type 2N140.	59	**2N219**
4·0 (4·0)	0·5 0·5			65	— —	0·85	Physically different only to type 2N175.	59	**2N220**
(1·0) 9·0 (9·0)	(0) 1·0 1·0	—	10	60	— —	30		60	**2N247**
(30)	(0)	300	1000				As Class "A" power amplifier with $V_s = -14V$: Load resistance $= 20\Omega$. Power output $=$ 1·5W.	62	**2N250**
(30) —	(0) 500	300	1000	[90]	[30] —			62	**2N251**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$ V	$-I_C$ mA Peak	$-I_C$ mA Average	$-V_{EB}$ V	P_C at 25°C Ambient mW
2N252	PNP CONVERTER	$-V_{CE}$ 16	—	5	—	30
2N270	PNP AUDIO POWER AMPLIFIER	25	150	75	—	250
2N278	PNP AUDIO POWER AMPLIFIER	40	—	13A	—	55W
2N301	PNP AUDIO POWER AMPLIFIER	40	3A	1·5A	12	11W at T_{mb} = 80°C
2N301A	PNP AUDIO POWER AMPLIFIER	60	3A	1·5A	12	11W at T_{mb} = 80°C
2N308	PNP I.F. AMPLIFIER	$-V_{CE}$ 20	—	5	—	30
2N309	PNP I.F. AMPLIFIER	$-V_{CE}$ 20	—	5	—	30
2N351	PNP AUDIO POWER AMPLIFIER	40	3A	—	—	10W at T_{mb} = 80°C
2N362	PNP AUDIO DRIVER	20	—	6	—	167
2N363	PNP AUDIO DRIVER	40	—	6	—	167
2N370	PNP R.F. AMPLIFIER	24	—	10	1·5	80
2N371	PNP LOCAL OSCILLATOR	24	—	10	0·5	80
2N372	PNP MIXER	24	—	10	0·5	80
2N373	PNP I.F. AMPLIFIER	24	—	10	0·5	80

TYPICAL CHARACTERISTICS AT 25°C: TEST CONDITION $-V_{CE}$ or $(-V_{CB})$ V	TEST CONDITION $-I_C$ or (I_E) mA	$-I_{CBo}$ μA Typical	$-I_{CBo}$ μA Max.	h_{fe} or $[h_{FE}]$ Typical	h_{fe} or $[h_{FE}]$ Range	$f_{\alpha b}$ or $\{f_1\}$ Mc/s	ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
(12)	(0)	5·0	10					70	**2N252**
(25) 1·0	(0) 150	—	16	[70]	— —		As Class "B" push-pull output stage with $V_s = -12V$: Load resistance per collector=150Ω. Power output = 500mW.	58	**2N270**
								62	**2N278**
(0·5) 1·5	(0) 1000	—	100	[70]	— —		As Class "A" power amplifier with $V_s = -14{\cdot}4V$: Load resistance = 15Ω. Power output = 5W.	62	**2N301**
(0·5) 1·5	(0) 1000	—	100	[70]	— —			62	**2N301A**
(9·0)	(0)	5·0	10					70	**2N308**
(9·0)	(0)	5·0	10					70	**2N309**
(30) 2	(0) 700	—	3mA	[65]	— —		As Class "A" power amplifier with $V_s = -14{\cdot}4V$: Load resistance = 15Ω. Power output = 4W.	62	**2N351**
(20) 6·0	(0) (1·0)	10	25	100	— —			59	**2N362**
(20) 6·0	(0) (1·0)	10	25	50	— —			59	**2N363**
(12) 12 (12)	(0) (1·0) (1·0)	—	20	60	— —	30		60	**2N370**
(12) (12)	(0) (1·0)	—	20			30		60	**2N371**
(12) 12 (12)	(0) (1·0) (1·0)	—	20	60	— —	30		60	**2N372**
(12) 12 (12)	(0) (1·0) (1·0)	—	8·0	60	— —	30		60	**2N373**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$	$-I_C$ mA		$-V_{EB}$	P_C at 25°C Ambient
		V	Peak	Average	V	mW
2N374	PNP CONVERTER	24	—	10	0·5	80
2N376	PNP AUDIO POWER AMPLIFIER	40	3A	—	—	10A at T_{mb} = 80°C
2N405	PNP AUDIO DRIVER AMPLIFIER	20	—	70	2·5 (D.C. + peak A.C.)	150
2N406	PNP AUDIO DRIVER AMPLIFIER	20	—	70	2·5 (D.C. + peak A.C.)	150
2N407	PNP AUDIO POWER AMPLIFIER	20	—	150	2·5	150
2N408	PNP AUDIO POWER AMPLIFIER	20	—	150	2·5	150
2N409	PNP I.F. AMPLIFIER	13	—	15	0·5	80
2N410	PNP I.F. AMPLIFIER	13	—	15	0·5	80
2N411	PNP CONVERTER	13	—	15	0·5	80
2N412	PNP CONVERTER	13	—	15	0·5	80
2N422	PNP AUDIO PREAMPLIFIER	35	200	100	12	150
2N464	PNP AUDIO AMPLIFIER	45	200	100	12	150
2N465	PNP AUDIO AMPLIFIER	45	200	100	12	150

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ µA		h_{fe} or $[h_{FE}]$		$f_{\alpha b}$ or $\{f_1\}$			
$-V_{CE}$ or $(-V_{CB})$ V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			
(12) 12 (12)	(0) (1·0) (1·0)	—	8·0	60	— —	30	As self-excited converter at 1 Mc/s: $V_{CE} = -12V$. $I_E = 0·6mA$. R.M.S. base to emitter oscillator injection voltage = 100mV.	60	**2N374**
(30) 2·0	(0) 700	—	3mA	[78]	— —		As Class "A" power amplifier with $V_s = -14·4V$: Load resistance = 15Ω. Power output = 4W.	62	**2N376**
(12) 6 (6)	(0) (1·0) (1·0)	—	14	35	— —	0·65		58	**2N405**
(12) 6 (6)	(0) (1·0) (1·0)	—	14	35	— —	0·65	Physically different only to type 2N405.	59	**2N406**
(12) 1·0	(0) 50	—	14	[65]	— —		As Class "B" push-pull output stage with $V_s = -14·4V$: Load resistance per collector=200Ω. Power output = 160mW.	58	**2N407**
(12) 1·0	(0) 50	—	14	[65]	— —		Physically different only to type 2N407.	59	**2N408**
(13) 9·0 (9·0)	(0) (1·0) (1·0)	—	10	48	— —	6·7		58	**2N409**
(13) 9·0 (9·0)	(0) (1·0) (1·0)	—	10	48	— —	6·7	Physically different only to type 2N409.	59	**2N410**
(13) 9·0 (9·0)	(0) (0·6) (0·6)	—	10	75	— —	10	As self-excited converter at 1 Mc/s: $V_{CE} = -9V$. $I_E = 0·6mA$. R.M.S. base to emitter oscillator injection voltage = 100mV.	58	**2N411**
(13) 9·0 (9·0)	(0) (0·6) (0·6)	—	10	75	— —	10	Physically different only to type 2N411.	59	**2N412**
(20) 6·0	(0) (1·0)	6·0	15	50	— —	0·8		59	**2N422**
(20) 6·0	(0) (1·0)	6·0	15	26	14 —	0·7		59	**2N464**
(20) 6·0	(0) (1·0)	6·0	15	45	27 —	0·8		59	**2N465**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$	$-I_C$ mA		$-V_{EB}$	P_C at 25°C Ambient
		V	Peak	Average	V	mW
2N466	**PNP AUDIO AMPLIFIER**	35	200	100	12	150
2N467	**PNP AUDIO AMPLIFIER**	35	200	100	12	150
2N481	**PNP LOCAL OSCILLATOR**	Supply 12	—	20	—	150
2N482	**PNP I.F. AMPLIFIER**	Supply 12	—	20	—	150
2N483	**PNP I.F. AMPLIFIER**	Supply 12	—	20	6	150
2N484	**PNP I.F. AMPLIFIER**	Supply 12	—	20	6	150
2N485	**PNP I.F. AMPLIFIER**	Supply 12	—	10	6	150
2N486	**PNP CONVERTER**	Supply 12	—	10	6	150
2N544	**PNP R.F. AMPLIFIER**	18	—	10	1·0 (D.C. + peak A.C.)	80
2N591	**PNP AUDIO DRIVER AMPLIFIER**	32	—	40	12	50
2N631	**PNP AUDIO POWER AMPLIFIER**	25	100	50	6	167
2N632	**PNP AUDIO POWER AMPLIFIER**	30	100	50	6	167
2N633	**PNP AUDIO POWER AMPLIFIER**	35	100	50	6	167
2N640	**PNP R.F. AMPLIFIER**	34	—	10	1·0	80
2N641	**PNP I.F. AMPLIFIER**	34	—	10	1·0	80

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ µA		h_{fe} or $[h_{FE}]$		fαb or $\{f_1\}$			
$-V_{CE}$ or $(-V_{CB})$ V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			
(20) 6·0	(0) (1·0)	6·0	15	90	56 —	1·0		59	**2N466**
(20) 6·0	(0) (1·0)	6·0	15	180	112 —	1·2		59	**2N467**
(12) 6·0	(0) (1·0)	3·0	10	50	— —	3·0		59	**2N481**
(12) 6·0	(0) (1·0)	3·0	10	50	— —	3·5		59	**2N482**
(12) 6·0	(0) (1·0)	3·0	10	60	— —	5·5		59	**2N483**
(12) 6·0	(0) (1·0)	3·0	10	90	— —	10		59	**2N484**
(12) 6·0	(0) (1·0)	3·0	10	50	— —	7·5		59	**2N485**
(12) 6·0	(0) (1·0)	3·0	10	100	— —	12		59	**2N486**
(12) 12 (12)	(0) (1·0) (1·0)	—	4·0	60	— —	30		60	**2N544**
(1·0) 12	(0) (2·0)	—	7·0	70	— —			59	**2N591**
(20) 6·0 6·0	(0) (10) (1·0)	10	25	150	— —	1·2		59	**2N631**
(20) 6·0 (6·0)	(0) (10) (1·0)	10	25	100	— —	1·0		59	**2N632**
(20) 6·0 (6·0)	(0) (10) (1·0)	10	25	60	— —	0·8		59	**2N633**
(12) 12 (12)	(0) 1·0 1·0	—	5·0	60	— —	42		60	**2N640**
(12) 12 (12)	(0) 1·0 1·0	—	7·0	60	— —	42		60	**2N641**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$	$-I_C$ mA		$-V_{EB}$	P_C at 25°C Ambient
		V	Peak	Average	V	mW
2N642	**PNP CONVERTER**	34	—	10	1·0	80
2N1107	**PNP R.F. AMPLIFIER**	16	—	5	—	30
2N1108	**PNP CONVERTER**	16	—	5	—	30
2N1110	**PNP I.F. AMPLIFIER**	16	—	5	—	30
2N1111	**PNP I.F. AMPLIFIER**	20	—	5	—	30
AC107	**PNP AUDIO PREAMPLIFIER**	15	10	5	5	83
AF102	**PNP R.F. AMPLIFIER**	25	—	10	—	50 at 45°C
AF114	**PNP R.F. AMPLIFIER**	20	—	10	0·5	50 at 45°C
AF115	**PNP R.F. AMPLIFIER**	20	—	10	0·5	50 at 45°C
AF116	**PNP I.F. AMPLIFIER**	20	—	10	0·5	50 at 45°C
AF117	**PNP CONVERTER**	20	—	10	0·5	50 at 45°C
AF118	**PNP MEDIUM POWER R.F. AMPLIFIER**	50	—	30	—	250* at 45°C
AT874	**PNP AUDIO DRIVER AMPLIFIER**	$-V_{CE}$ 28	50	—	6	150
AT1138	**PNP AUDIO POWER AMPLIFIER**	40	—	3A	20	$P_{tot} = 15W$ at $T_{mb} = 70°C$
OC16 2-OC16	**PNP AUDIO POWER AMPLIFIER**	32	3A	1·5A	10	10W at $T_{mb} = 65°C$
OC16G 2-OC16G	**PNP AUDIO POWER AMPLIFIER**	Peak 30	2A	—	Peak 8	10W at $T_{mb} = 65°C$

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ μA		h_{fe} or $[h_{FE}]$		fαb or $\{f_1\}$			
$-V_{CE}$ or $(-V_{CB})$ V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			
(12) 12 (12)	(0) 1·0 1·0	—	7·0	60	— —	42		60	**2N642**
(12) (6·0) (5·0)	(0) 0·5 1·0	5·0	10	34db (See note)	— —	40	h_{fe} measured at 455 kc/s.	70	**2N1107**
(12) (6·0) (5·0)	(0) 0·5 1·0	5·0	10	33db (See note)	— —	35	h_{fe} measured at 455 kc/s.	70	**2N1108**
(12) (6·0) (5·0)	(0) 0·5 1·0	5·0	10	29db (See note)	— —	35	h_{fe} measured at 455 kc/s.	70	**2N1110**
(12) (6·0) (5·0)	(0) 0·5 1·0	5·0	10	25db (See note)	— —	35	h_{fe} measured at 455 kc/s.	70	**2N1111**
(2·0) 6·0	(0) (1·0)	0·5	1·1	—	40 250	2·0	Low noise figure.	58	**AC107**
(12) 12 (12)	(0) 1·0 (1·0)	—	10	—	20 —	{180}		60	**AF102**
(6·0) 6·0 (6·0)	(0) (1·0) (1·0)	1·2	8·0	150	— —	{75}		60	**AF114**
(6·0) 6·0 (6·0)	(0) (1·0) 1·0	1·2	8·0	150	— —	{75}		60	**AF115**
(6·0) 6·0 (6·0)	(0) (1·0) (1·0)	1·2	8·0	150	— —	{75}		60	**AF116**
(6·0) 6·0 (6·0)	(0) (1·0) (1·0)	1·2	8·0	150	— —	{75}		60	**AF117**
(0·5) 6	(0) 10	—	5			{175}	*With cooling fin	60	**AF118**
(20)	(0)	10	25					59	**AT874**
(25)	(0)	—	2mA					62	**AT1138**
(14) 14 7	(0) (30) (300)	20	100	[40] [45]	[17] [110] [16] [90]		Type 2-OC16 is a matched pair of OC16.	57	**OC16** **2-OC16**
(30) 14 7	(0) (30) (300)	—	3000	[40] [45]	— — — —		Type 2-OC16G is a matched pair of OC16G.	57	**OC16G** **2-OC16G**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$	$-I_C$ mA		$-V_{EB}$	P_C at 25°C Ambient
		V	Peak	Average	V	mW
OC26 **2-OC26**	**PNP AUDIO POWER AMPLIFIER**	40	—	3·5A	10	12·5W at T_{mb} = 75°C
OC30 **2-OC30**	**PNP AUDIO POWER AMPLIFIER**	Peak 32 D.C. 16	1·4A	1·4A	10	2W at T_{mb} = 60°C
OC44	**PNP CONVERTER, R.F. AMPLIFIER**	15	10	5	12	83
OC45	**PNP I.F. AMPLIFIER**	15	10	5	12	83
OC57	**PNP AUDIO AMPLIFIER**	7	10	5	7	10
OC58	**PNP AUDIO AMPLIFIER**	7	10	5	7	10
OC59	**PNP AUDIO AMPLIFIER**	7	10	5	7	10
OC60	**PNP AUDIO POWER AMPLIFIER**	7	10	5	7	10
OC65	**PNP AUDIO AMPLIFIER**	10	—	10	10	25 at T_{amb} = 45°C
OC66	**PNP AUDIO AMPLIFIER**	10	—	10	10	25 at T_{amb} = 45°C
OC70	**PNP AUDIO AMPLIFIER**	$-V_{CE}$ 30 See Note	50	10	—	125
OC71	**PNP AUDIO AMPLIFIER**	$-V_{CE}$ 30 See Note	50	10	—	125

TRANSISTORS

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ µA		h_{fe} or [h_{FE}]		$f\alpha b$ or {f_1}			
$-V_{CE}$ or ($-V_{CB}$) V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			
(0·5) 14	(0) 30	15	100	[40]	[20] [75]		As Class "A" power amplifier with $V_S = -14V$: Load resistance = 23Ω. Power output = 4W. As Class "B" push-pull power amplifier using 2-OC26 with $V_S = -14V$: Load resistance collector to collector = 16Ω. Power output = 17·9W. Type 2-OC26 is a matched pair of OC26.	62	**OC26** **2-OC26**
(14) 14 7·0 (7·0)	(0) (10) (100) (100)	12	40	[32] [36]	— — — —	0·3	Type 2-OC30 is a matched pair of OC30.	62	**OC30** **2-OC30**
(2·0) 6·0 (6·0)	(0) (1·0) (1·0)	0·5	2·0	100	45 225	15	As self-excited converter at 1 Mc/s: $V_{CE} = -5{\cdot}1V$. $I_E = 0{\cdot}4mA$. R.M.S. base to emitter oscillator injection voltage = 50mV.	58	**OC44**
(2·0) 6·0 (6·0)	(0) (1·0) (1·0)	0·5	2·0	50	25 125	6·0		58	**OC45**
(2·0) 0·5	(0) (0·25)	1·5	—	35	20 —		For use in hearing aids.	61	**OC57**
(2·0) 0·5	(0) (0·25)	1·5	—	55	30 —		For use in hearing aids.	61	**OC58**
(2·0) 0·5	(0) (0·25)	1·5	—	80	50 —		For use in hearing aids.	61	**OC59**
(2·0) 2·0	(0) (0·5)	1·5	—	60	— —		For use in hearing aids.	61	**OC60**
(4·5) 2·0	(0) (0·5)	5	12	30	— —		For use in hearing aids.	58	**OC65**
(4·5) 2·0	(0) (3·0)	5	12	47	— —		For use in hearing aids.	58	**OC66**
(4·5) 2·0	(0) 0·5	5	12	30	20 40		Permissible for base to emitter voltage not less than 0·1V.	58	**OC70**
(4·5) 2·0	(0) 3·0	4·5	12	47	30 75		Permissible for base to emitter voltage not less than 0·1V.	58	**OC71**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$	$-I_C$ mA		$-V_{EB}$	P_C at 25°C Ambient
		V	Peak	Average	V	mW
OC72 2-OC72	PNP AUDIO POWER AMPLIFIER	32	125	50	10	125
OC73	PNP GENERAL PURPOSE	32	—	10	30	125
OC74 2-OC74	PNP AUDIO POWER AMPLIFIER	20	—	300	6	225
OC75	PNP AUDIO AMPLIFIER	$-V_{CE}$ 30 See Note	50	10	—	125
OC76	PNP SWITCHINC AND PULSE OSCILLATOR	32	250	125	Peak 10	P_{tot} 125
OC78	PNP AUDIO POWER AMPLIFIER	Peak 20 Average 10	170	70	—	P_{tot} 200
OC79	PNP AUDIO AMPLIFIER	$-V_{CE}$ 26	—	300	—	225
OC80	PNP SWITCHING AND PULSE OSCILLATOR	32	600	300	20	550
OC169	PNP I.F. AMPLIFIER	20	—	10	—	50 at $T_{amb} = 45°C$
OC170	PNP CONVERTER, R.F. AMPLIFIER	20	—	10	—	50 at $T_{amb} = 45°C$
OC171	PNP R.F. AMPLIFIER	20	—	10	—	50 at $T_{amb} = 45°C$
SFT107	PNP I.F. AMPLIFIER	18	—	100	12	150
SFT108	PNP CONVERTER, R.F. AMPLIFIER	18	—	100	12	150

TRANSISTORS

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ μA		h_{fe} or $[h_{FE}]$		$f\alpha b$ or $\{f_1\}$			
$-V_{CE}$ or $(-V_{CB})$ V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			
(10) 5·4 0·7 (6)	(0) (10) (80) (10)	4·5	10	[70] [50]	[45] [120] [30] [90]	0·35 min.	As Class "B" push-pull output stage using 2-OC72 with heat sink and at $V_S = -9V$: Load resistance collector to collector $= 305\Omega$. Power output = 355mW. Type 2-OC72 is a matched pair of OC72.	58	**OC72** **2-OC72**
(4·5) 10 (10)	(0) (0·5) (0·5)	3·5	6·0	45	30 65	0·5		58	**OC73**
(9) (6)	(0) (50)	—	20			1·5	As Class "B" push-pull output stage using 2-OC74 with heat sink and at $V_S = -9V$: Load resistance collector to collector $= 93\Omega$. Power output = 1·04W. Type 2-OC74 is a matched pair of OC74.	58	**OC74** **2-OC74**
(4·5) 2·0	(0) 3·0	4·5	12	90	65 130		Permissible for base to emitter voltage not less than 0·5V.	58	**OC75**
(10) 5·4 0·7 (6)	(0) (10) (125) (10)	4·5	10	— —	[45] [330] [25] [170]	0·9	As push-pull D.C. converter with $V_S = -6V$: Supply power = 924mW. Output power = 710mW. Output voltage = 75·5V.	58	**OC76**
(10) 1·0	(0) 125	—	10	—	25 —			58	**OC78**
(12) 6	(0) 50	10	20	[60]	[35] [110]			58	**OC79**
(12) 6 (6)	(0) (50) (50)	10	20	[180]	— —	2·0		58	**OC80**
(6) (6)	(0) (1·0)	1·5	13	100	20 —	{70}		60	**OC169**
(6) (6)	(0) (1·0)	1·5	13	100	20 —	{70}		60	**OC170**
(6) 6)	(0) (1·0)	1·5	13	100	20 —	{70}		60	**OC171**
(15) 6·0 (6·0)	(0) 1·0 1·0	2·0	10	40	25 120	7·0		58	**SFT107**
(15) 6·0 6·0	(0) 1·0 1·0	2·0	10	70	40 160	13		58	**SFT108**

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$	$-I_C$ mA		$-V_{EB}$	P_C at 25°C Ambient
		V	Peak	Average	V	mW
SFT122	**PNP AUDIO POWER AMPLIFIER**	24	—	250	12	200
SFT123	**PNP AUDIO POWER AMPLIFIER**	24	—	250	12	200
SFT151	**PNP AUDIO AMPLIFIER**	24	—	150	12	200
SFT152	**PNP AUDIO AMPLIFIER**	24	—	150	12	200
SFT153	**PNP AUDIO AMPLIFIER**	24	—	150	12	200
SFT213	**PNP AUDIO POWER AMPLIFIER**	40	—	3A	20	30W at $T_{mb} = 25°C$
TS1	**PNP AUDIO AMPLIFIER**	$-V_{CE}$ 20	—	25	—	125
TS2	**PNP AUDIO AMPLIFIER**	$-V_{CE}$ 20	—	25	—	125
TS3	**PNP AUDIO AMPLIFIER**	$-V_{CE}$ 20	—	25	—	125
TS3-Z	**PNP AUDIO DRIVER AMPLIFIER**	$-V_{CE}$ 30	—	25	—	125
TS13	**PNP AUDIO AMPLIFIER**	$-V_{CE}$ 20	—	25	—	125
TS14	**PNP AUDIO AMPLIFIER**	$-V_{CE}$ 20	—	25	—	125
V30/20P	**PNP AUDIO POWER AMPLIFIER**	30	—	3A	10	10W

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ µA		h_{fe} or $[h_{FE}]$		fαb or {f_1}			
$-V_{CE}$ or ($-V_{CB}$) V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			
(24)	(0)	5·0	15						
6·0	1·0			50	32 85			58	SFT122
1·0	100			[50]	[40] [60]				
(6·0)	1·0					1·6			
(24)	(0)	5·0	15						
6·0	1·0			85	55 200			58	SFT123
1·0	100			[85]	[60] [150]				
(6·0)	1·0					2·6			
(24)	(0)	5·0	15						
1·0	10			30	— —			58	SFT151
(6·0)	1·0					1·6			
(24)	(0)	5·0	15						
6·0	1·0			50	40 60			58	SFT152
1·0	10			[57]	— —				
(6·0)	1·0					1·6			
(24)	(0)	5·0	15						
6·0	1·0			80	60 150			58	SFT153
1·0	10			[92]	— —				
(6·0)	1·0					2·4			
(40)	(0)	100	1000						
5·0	1A			40	— —			62	SFT213
2·0	2A			[40]	[20] [150]				
(1·0)	100					0·2			
(10)	(0)	6·0	—				As Class "AB" push-pull output stage with $V_s = -6V$:		
4·0	2·0			20	— —		Load resistance collector to collector = 325Ω.	69	TS1
(4·0)	2·0					0·6	Power output = 100mW.		
(10)	(0)	6·0	—						
4·0	2·0			40	— —			69	TS2
(4·0)	2·0					0·7			
(10)	(0)	6·0	—						
4·0	2·0			70	— —			69	TS3
(4·0)	2·0					1·2			
(10)	(0)	6·0	—						
4·0	2·0			70	— —			69	TS3-Z
(4·0)	2·0					1·2			
(9·0)	(0)	2·0	10						
9·0	1·0			52	40 90			69	TS13
(9·0)	1·0					0·75			
(9·0)	(0)	2·0	10						
9·0	1·0			32	20 45			69	TS14
(9·0)	1·0					0·6			
(1·5)	(0)	—	100						
(1·5)	200			[24]	[20] [30]	0·2		62	V30/20P

TYPE No.	DESCRIPTION	MAXIMUM RATINGS (Absolute Maximum)				
		$-V_{CB}$	$-I_C$ mA		$-V_{EB}$	P_C at 25°C Ambient
		V	Peak	Average	V	mW

TRANSISTORS

TYPICAL CHARACTERISTICS AT 25°C							ADDITIONAL DATA AND NOTES	Base Fig.	TYPE No.
TEST CONDITION		$-I_{CBo}$ μA		h_{fe} or $[h_{FE}]$		$f_{\alpha b}$ or $\{f_1\}$			
$-V_{CE}$ or $(-V_{CB})$ V	$-I_C$ or (I_E) mA	Typical	Max.	Typical	Range	Mc/s			

VALVE CROSS-REFERENCE INDEX

E.I.A. (American) — European

E.I.A. Type No.	European Type No.	E.I.A. Type No.	European Type No.	E.I.A. Type No.	European Type No.
OE3	85A1	6AB4	EC92	6CH6	EL821
OG3	85A2	6AB8	ECL80	6CJ5	EF41
1A3	DA90	6AD8	EBF81	6CJ6	EL81
1A7GT	DK32	6AE8	X79	6CK5	EL41
1AB6	DK96	6AJ8	ECH81	6CK6	EL83
1AC6	DK92	6AK5	EF95	6CM4	EC86
1AH5	DAF96	6AK8	EABC80	6CM5	EL36
1AJ4	DF96	6AL3	EY189	6CN6	EL38
1AN5	DF97	6AL5	EAA91	6CQ6	EF92
1B3GT	DY30	6AM5	EL91	6CS6	EH90
1C5GT	DL35	6AM6	EF91	6CT7	EAF42
1E3	DC80	6AN7	ECH80	6CU7	ECH42
1H5GT	DAC32	6AQ4	EC91	6CV7	EBC41
1L4	DF92	6AQ5	EL90	6CW5	EL86
1M3	DM70	6AQ8	ECC85	6CW7	ECC84
1N3	DM71	6AT6	EBC90	6DA5	EM81
1N5GT	DF33	6AU6	EF94	6DA6	EF89
1Q5GT	DL36	6AV6	EBC91	6DC8	EBF89
1R5	DK91	6BA6	EF93	6DJ8	ECC88
1S2	DY86	6BD7	EBC80	6DL4	EC88
1S4	DL91	6BE6	EK90	6DL5	EL95
1S5	DAF91	6BE7	EQ80	6DR8	EBF83
1T4	DF91	6BH5	EF81	6DS8	ECH83
1U5	DAF92	6BJ5	N78	6DX8	ECL84
1V6	DCE60	6BK8	EF86	6DY5	EL82
1X2A	R19	6BL8	ECF80	6EH7	EF183
2B35	EA50	6BM8	ECL82	6EJ7	EF184
2D21	PL21	6BN5	EL85	6ER5	EC95
3A4	DL93	6BQ5	EL84	6ES6	EF97
3A5	DCC90	6BQ7A	ECC180	6ES8	ECC189
3C4	DL96	6BR5	EM80	6ET6	EF98
3Q4	DL95	6BS4	EC93	6FC7	ECC89
3Q5GT	DL33	6BT4	EZ40	6FG6	EM84
3S4	DL92	6BX6	EF80	6FV5	EL136
3V4	DL94	6BY7	EF85	6FY5	EC97
4CM4	PC86	6C4	EC90	6GB5	EL500
4DL4	PC88	6CA4	EZ81	6GM8	ECC86
4ER5	PC95	6CA7	EL34	6GV8	ECL185
5AQ4	GZ32	6CB6	EF190	6GW8	ECL86
5AR4	GZ34	6CD7	EM34	6GX8	EAM86
5Z4GT	GZ30	6CF4	EZ30	6HG8	ECF86

VALVE CROSS-REFERENCE INDEX

E.I.A. (American) — European

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6J6	ECC91
6K4	EC70
6M5	EL80
6N3	EY82
6N8	EBF80
6Q4	EC80
6R3	EY81
6R4	EC81
6S2	EY86
6U3	EY80
6U8	ECF82
6V4	EZ80
6X2	EY51
6X4	EZ90
6X5GT	EZ35
7AN7	PCC84
7DJ8	PCC88
7ES8	PCC189
7FC7	PCC89
7HG8	PCF86
9A8	PCF80
9AK8	PABC80
9AQ8	PCC85
9U8	PCF82
12AC5	UF41
12AJ7	HCH81
12AU6	HF94
12AQ5	HL90
12AT6	HBC90
12AT7	ECC81
12AU7	ECC82
12AV6	HBC91
12AX7	ECC83
12BA6	HF93
12BE6	HK90
12BY7	EL180
12S7	UAF42
12X4	HZ90
14GW8	PCL86
14K7	UCH42
14L7	UBC41
15A6	PL83
15DQ8	PCL84
15CW5	PL84
16A5	PL82
16A8	PCL82
17C8	UBF80
17Z3	PY81
18GV8	PCL85
19D8	UCH81
19FL8	UBF89
19X3	PY80
19Y3	PY82
21A6	PL81
25E5	PL36
28GB5	PL500
30AE3	PY88
30A5	HL94
30C1	PCF80
30L1	PCC84
31A3	UY41
31AV3	UY89
35FV5	PL136
35W4	HY90
38A3	UY85
45A5	UL41
45B5	UL84
50BM8	UCL82
50C5	HL92
55N3	UY82
5861	EC55
5882	DC80
5920	E90CC
6007	DL67
6008	DF67
6084	E80F
6085	E80CC
6218	E80T
6227	E80L
6267	EF86
6374	EY84
6375	DC70
6686	E81L
6687	E91H
6688	E180F
6689	E83F
6922	E88CC
6923	EA52
7062	E180CC
7118	E181CC
7119	E182CC
7308	E188CC
7316	ECC186
7534	E130L
7643	E80CF
7693	E90F
7694	E99F
7737	E186F

European — E.I.A. (American)

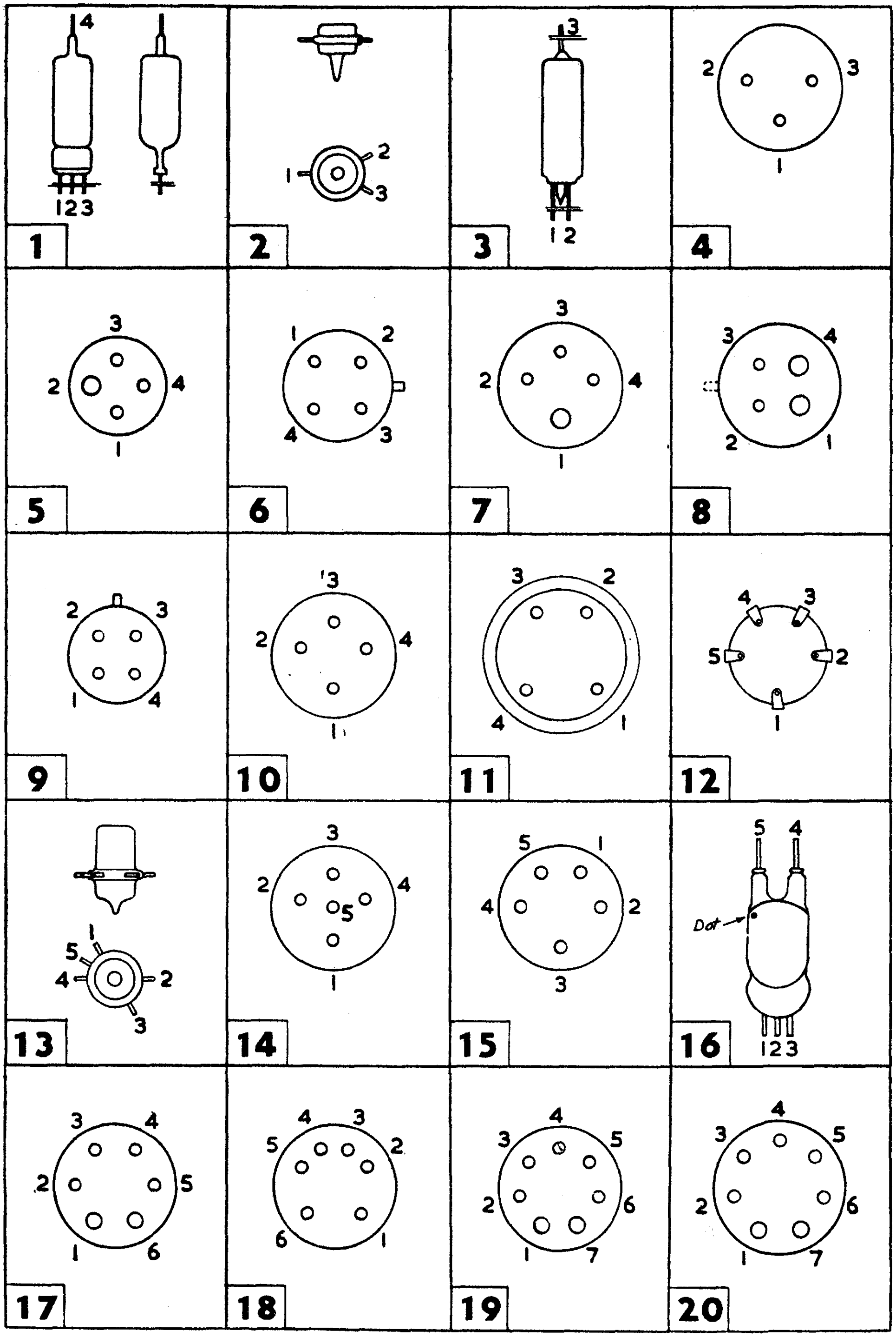
European Type No.	E.I.A. Type No.	European Type No.	E.I.A. Type No.	European Type No.	E.I.A. Type No.
DA90	1A3	E90F	7693	ECC88	6DJ8
DAC32	1H5GT	E91H	6687	ECC89	6FC7
DAF91	1S5	E99F	7694	ECC180	6BQ7A
DAF93	1U5	E130L	7534	ECC186	7316
DAF96	1AH5	E180CC	7062	ECC189	6ES8
DC70	6375	E181CC	7118	ECF86	6HG8
DC80	1E3	E182CC	7119	ECF80	6BL8
DCC90	3A5	E186F	7737	ECF82	6U8
DCF60	1V6	E188CC	7308	ECH42	6CU7
DF33	1N5GT	EA52	6293	ECH80	6AN7
DF67	6008	EAA91	6AL5	ECH81	6AJ8
DF91	1T4	EABC80	6AK8	ECH83	6DS8
DF92	1L4	EAF42	6CT7	ECL80	6AB8
DF96	1AJ4	EB91	6AL5	ECL82	6BM8
DF97	1AN5	EAM86	6GX8	ECL84	6DX8
DK32	1A7GT	EBC41	6CV7	ECL85	6GV8
DK91	1R5	EBC80	6BD7	ECL86	6GW8
DK92	1AC6	EBC90	6AT6	EF41	6CJ5
DK96	3C4	EBC91	6AV6	EF80	6BX6
DL33	3Q5GT	EBF80	6N8	EF81	6BH5
DL35	1C5GT	EBF81	6AD8	EF85	6BY7
DL36	1Q5GT	EBF83	6DR8	EF86	6BK8/6267
DL91	1S4	EBF89	6DC8	EF89	6DA6
DL92	3S4	EC55	5861	EF91	6AM6
DL93	3A4	EC70	6K4	EF92	6CQ6
DL94	3V4	EC80	6Q4	EF93	6BA6
DL95	3Q4	EC81	6R4	EF94	6AU6
DL96	3C4	EC86	6GM8	EF96	6AK5
DM70	1M3	EC88	6DJ8	EF97	6ES6
DM71	1N3	EC90	6C4	EF98	6ET6
DY30	1B3GT	EC91	6AQ4	EF183	6EH7
DY86	1S2	EC92	6AB4	EF184	6EJ7
E80CC	6085	EC93	6BS4	EF190	6CB6
E80CF	7643	EC95	6ER5	EH90	6CS6
E80F	6084	EC97	6FY5	EK90	6BE6
E80L	6227	ECC81	12AT7	EL34	6CA7
E80T	6218	ECC82	12AU7	EL36	6CM5
E81L	6686	ECC83	12AX7	EL38	6CN6
E83F	6689	ECC84	6CW7	EL41	6CK5
E88CC	6922	ECC85	6AQ8	EL80	6M5
E90CC	6920	ECC86	6GM8	EL81	6CJ6

VALVE CROSS-REFERENCE INDEX

European — E.I.A. (American)

European Type No.	E.I.A. Type No.
EL82	6DY5
EL83	6CK6
EL84	6BQ5
EL85	6BN5
EL86	6CW5
EL90	6AQ5
EL91	6AM5
EL95	6DL5
EL136	6FV5
EL180	12BY7
EL821	6CH6
EL500	6GB5
ELL80	6HU8
EM34	6CD7
EM80	6BR5
EM81	6DA5
EM84	5FG6
EQ80	6BE7
EY51	6X2
EY80	6U3
EY81	6R3
EY82	6N3
EY84	6374
EY86	6S2
EY189	6AL3
EZ30	6CF4
EZ35	6X5GT
EZ40	6BT4
EZ80	6V4
EZ81	6CA4
EZ90	6X4
GZ30	5Z4GT
GZ32	5AQ4
GZ34	5AR4
HBC90	12AT6
HBC91	12AV6
HCH81	12AJ7
HF93	12BA6
HF94	12AU6
HK90	12BE6
HL90	12AQ5
HL92	50C5
HL94	30A5
HY90	35W4
HZ90	12X4
N78	6BJ5
N144	6AM5
PABC80	9AK8
PC86	4CM4
PC88	4DL4
PC95	4ER5
PCC84	7AN7
PCC85	9AQ8
PCC88	7DJ8
PCC89	7FC7
PCC189	7ES8
PCF80	9A8
PCF82	9U7
PCF86	7HG8
PCL82	16A8
PCL84	15DQ8
PCL85	18GV8
PCL85	14GW8
PL21	2D21
PL36	25E5
PL81	21A6
PL82	16A5
PL83	15A6
PL84	15CW5
PL136	35FV5
PL500	28GB5
PY80	19X3
PY81	17Z3
PY82	19Y3
PY88	30AE3
R19	1X2A
UAF42	12S7
UBC41	14L7
UBF80	17C8
UBF89	19FL8
UCH42	14K7
UCH81	19D8
UCL82	50BM8
UF41	12AC5
UL41	45A5
UL84	45B5
UY41	31A3
UY82	55N3
UY85	38A3
UY89	31AV3
X17	1R5
X18	1AC6
X79	6AE8
X719	6AJ8
X727	6BE6
30C1	9A8
30L1	7AN7
85A1	OE3
85A2	OG3

BASE FIGURES



This and the next five pages were printed on pull-out sheets inside the front and back covers. In this scanned version they have been brought together and re-ordered for convenience.

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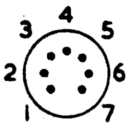

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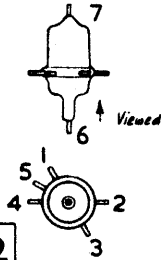

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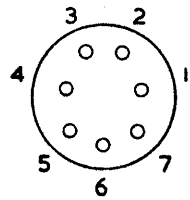

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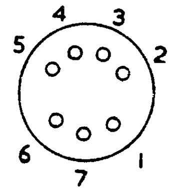

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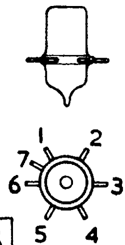

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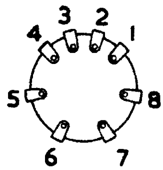

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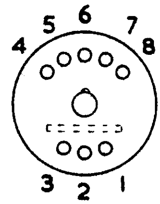

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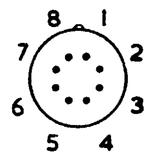

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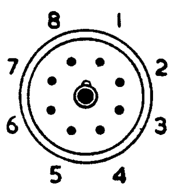

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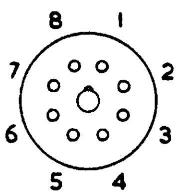

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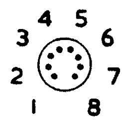

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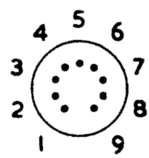

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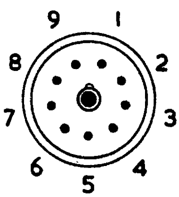

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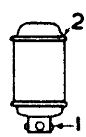

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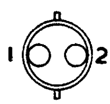

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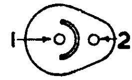

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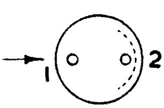

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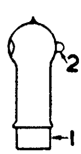

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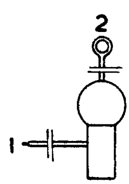

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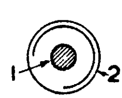

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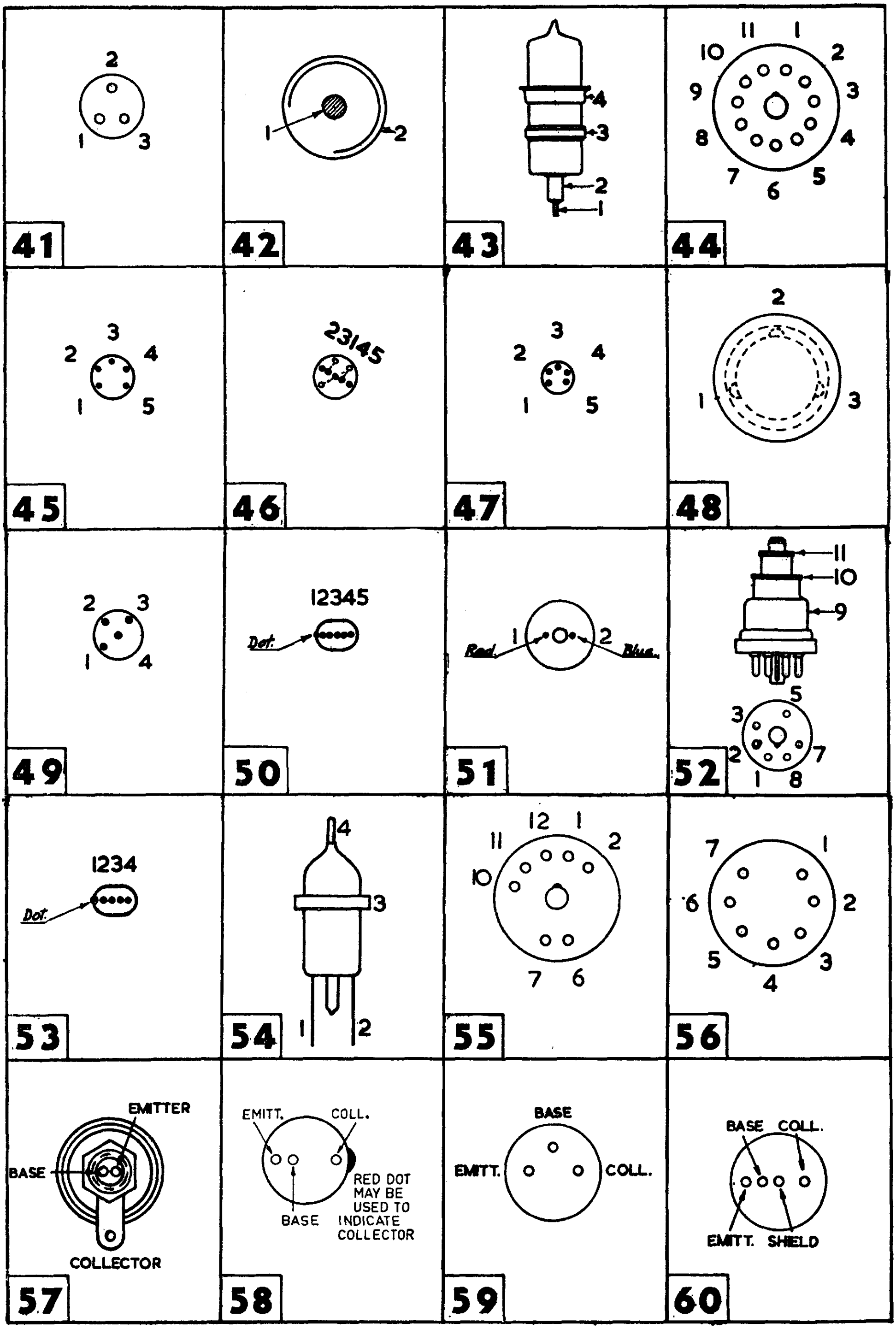
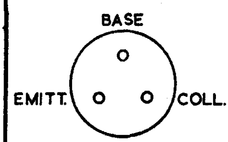
BASE FIGURES



BASE FIGURES



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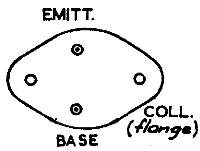

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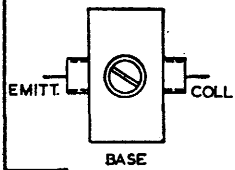

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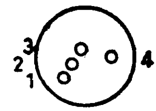

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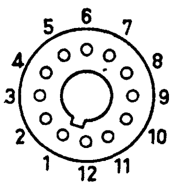

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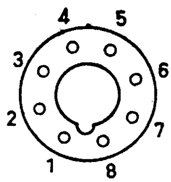

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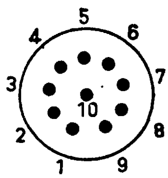

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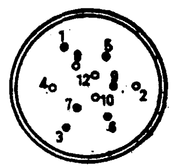

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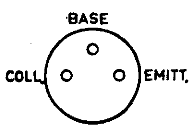

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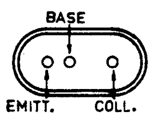

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BASE NOMENCLATURE

In the description of bases given below, reference is made to the country in which the base was originally introduced. Throughout the years, however, with an ever-increasing tendency towards world standardisation, many of the bases shown are now internationally accepted.

To-day their use in countries other than that of their origin is not merely confined to the production of types equivalent to those of the originating country, but also includes types of purely local development.

Drawing No.

1. European special all-glass miniature construction.
2. European radial 3-pin base.
3. European special wire-in all-glass miniature construction.
4. European 3-pin base.
5. American W.D. 4-pin base.
6. American 4-pin bayonet base.
7. European special 4-pin base.
8. American {dwarf shell / medium shell / small shell} 4-pin base with or without bayonet pin.
9. American small 4-pin NUB base.
10. European 4-pin base.
11. European special large 4-pin base.
12. European side contact 5-pin base.
13. American radial 5-pin base.
14. European 5-pin base.
15. American {small shell / medium shell} 5-pin base.
16. European special all-glass miniature construction .
17. American {small shell / medium shell} 6-pin base.
18. European 6-pin base.
19. American small shell 7-pin base.
20. American medium shell 7-pin base.
21. American miniature button 7-pin base.
22. American radial 5-pin base with end terminal.
23. European 7-pin base.
24. European 7-pin base.
25. American radial 7-pin base.
26. European side contact 8-pin base.
27. European 8-pin base with locating spigot.
28. European 8-pin miniature base (Rimlock) .
29. American 8-pin lock-in base.
30. American {dwarf shell / small shell / intermediate shell / small wafer with metal shell / medium shell} octal base, 5-, 6-, 7- or 8-pin.
31. American small button sub-minar 8-pin base.
32. American small button Noval 9-pin base.
33. European 9-pin lock-in base.
34. American special photo-electric cell construction.
35. Candelabra double contact bayonet base (international electric lamp cap).
36. European special 2-pin base.
37. European special 2-pin base.
38. European special photo-electric cell construction.
39. European special photo-electric cell construction.
40. Edison screw base (international electric lamp cap).

BASE NOMENCLATURE

In the description of bases given below, reference is made to the country in which the base was originally introduced. Throughout the years, however, with an ever-increasing tendency towards world standardisation, many of the bases shown are now internationally accepted.

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Drawing No.

41. American Pee Wee 3-pin base.
42. Giant Edison screw base (international electric lamp cap).
43. European special coaxial construction.
44. American small shell sub-magnal 11-pin base.
45. European sub-miniature 5-pin base (10 mm.).
46. As No. 45 after forming leads.
47. European sub-miniature 5-pin base (5 mm.).
48. European special side contact 3-pin base.
49. European sub-miniature 4-pin base.
50. American oval sub-miniature 5-pin base.
51. European end-on photo-electric cell construction 2-pin wire-in base.
52. Special disc-seal (lighthouse) construction, with American octal 5-pin base.
53. American oval sub-miniature 4-pin base.
54. European special construction.
55. Small shell Duodecal 6- or 7-pin base.
56. English all-glass construction 7-pin base.
57. European direct mounting transistor base.
58. American small round linotetrar 3-pin transistor base.
59. American small round flexible lead transistor base.
60. American small round linotetrar 4-pin transistor base.
61. American small round symmetrical flexible lead transistor base.
62. American direct mounting transistor base.
63. European direct mounting transistor base.
64. European miniature flexible lead base.
65. Universal duodecal 12-pin base.
66. American small button eightar 8-pin base.
67. American small button 10-pin base.
68. American medium ceramic-wafer twelvar base.
69. English small round flexible lead transistor base.
70. American small oval linotetrar 3-pin base.

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