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R-F POWER AMPLIFIER PENTODE

Filament	Thoriated Tungsten		
Voltage	10		a-c or d-c volts
Current	5		amp.
Transconductance	4000		μmhos
for plate current of 62.5 ma.			
Direct Interelectrode Capacitances:			
Grid to Plate (with external shielding)	0.15 max.		μμf
Input	17		μμf
Output	29		μμf
Overall Length		9-1/16" ± 3/16"	←
Seated Height		8-5/16" ± 3/16"	
Maximum Diameter		2-9/16"	
Bulb		T-20	
Cap		Medium	
Base	Medium Shell Giant 5-Pin Micanol,	Bayonet	←
RCA Socket		Stock No.9927	

*Maximum Ratings Are Absolute Values***MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS****R-F POWER AMPLIFIER - Class B Telephony***Carrier conditions per tube for use with a max. modulation fact. of 1.0*

D-C Plate Voltage	2000 max.	volts
D-C Suppressor Voltage (Grid #3)	500 max.	volts
D-C Screen Voltage (Grid #2)	600 max.	volts
D-C Plate Current	160 max.	ma.
Plate Input	180 max.	watts
Suppressor Input	10 max.	watts
Screen Input	20 max.	watts
Plate Dissipation	125 max.	watts

Typical Operation:

D-C Plate Voltage	1250	1500	2000	volts
D-C Suppressor Voltage	40	40	40	volts
D-C Screen Voltage**	500	550	600	volts
D-C Grid Voltage (Grid #1) ^⓪	-30	-35	-40	volts
Peak R-F Grid Voltage	90	70	55	volts
D-C Plate Current	130	110	80	ma.
D-C Screen Current	33	30	20	ma.
D-C Grid Current	8	5	3	approx.ma.
Driving Power*	4.5	3.0	1.5	approx.watts
Power Output	52	53	53	approx.watts

* At crest of a-f cycle with modulation factor of 1.0.

⓪ For a-c filament supply.

● obtained from a fixed supply or from suitably by-passed cathode resistor. ←

SUPPRESSOR-MODULATED R-F POWER AMPLIFIER - Class C Telephony*Carrier conditions per tube for use with a max. modulation fact. of 1.0*

D-C Plate Voltage	2000 max.	volts
D-C Screen Voltage (Grid #2)	600 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	110 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	180 max.	watts
Screen Input	30 max.	watts

← Indicates a change. ** : See end of tabulation.

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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(continued from preceding page)

Plate Dissipation				125 max.	watts
Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	-70	-90	-110		volts
D-C Screen Voltage [△]	13000	17000	35000		ohms
D-C Grid Voltage [□]	{	-110	-100	-100	volts
		5000	5000	7000	ohms
Peak A-F Suppressor Volt.	110	130	150		volts
Peak R-F Grid Voltage	200	190	170		volts
D-C Plate Current	100	100	80		ma.
D-C Screen Current	70	70	48		ma.
D-C Grid Current	22	20	15		approx.ma.
Driving Power	4	3.5	2.5		approx.watts
Power Output	40	50	53		approx.watts

[△] voltage taken from unmodulated plate-voltage supply through resistor.

[□] From fixed supply, grid resistor (5000, 5000, 7000), or cathode resistor.

GRID-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage				2000 max.	volts
D-C Suppressor Voltage (Grid #3)				500 max.	volts
D-C Screen Voltage (Grid #2)				600 max.	volts
D-C Grid Voltage (Grid #1)				-500 max.	volts
D-C Plate Current				160 max.	ma.
Plate Input				180 max.	watts
Suppressor Input				10 max.	watts
Screen Input				20 max.	watts
Plate Dissipation				125 max.	watts
Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	40	40	40		volts
D-C Screen Voltage**	500	550	600		volts
D-C Grid Voltage	-100	-90	-80		volts
Peak R-F Grid Voltage	160	130	100		volts
Peak A-F Grid Voltage	75	65	50		volts
D-C Plate Current	130	110	80		ma.
D-C Screen Current	30	25	20		ma.
D-C Grid Current	8	6	4		approx.ma.
Driving Power*	4	3	2		approx.watts
Power Output	52	53	53		approx.watts

* At crest of a-f cycle with modulation factor of 1.0.

PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Pentode Connection

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage				1600 max.	volts
D-C Suppressor Voltage (Grid #3)				500 max.	volts
D-C Screen Voltage (Grid #2)				500 max.	volts
D-C Grid Voltage (Grid #1)				-500 max.	volts
D-C Plate Current				160 max.	ma.
D-C Grid Current				50 max.	ma.

** See end of tabulation. ← Indicates a change.



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(continued from preceding page)

Plate Input	250 max.	watts
Suppressor Input	10 max.	watts
Screen Input	20 max.	watts
Plate Dissipation	85 max.	watts
Typical Operation:		
D-C Plate Voltage	1250 1600	volts
D-C Suppressor Voltage	100 100	volts
D-C Screen Voltage #	{ 18000 27000	ohms
	{ 350 400	volts
D-C Grid Voltage ▲	{ -80 -80	volts
	{ 4000 4000	ohms
Peak R-F Grid Voltage	200 190	volts
D-C Plate Current	150 150	ma.
D-C Screen Current	50 45	ma.
D-C Grid Current	30 25	approx.ma.
Driving Power	6 5	approx.watts
Power Output	120 155	approx.watts

* From modulated fixed supply or modulated plate-voltage supply through resistor.

PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony*Tetrode Connection - Grids #2 & #3 tied together**Carrier conditions per tube for use with a max. modulation fact. of 1.0*

D-C Plate Voltage	1600 max.	volts
D-C Screen Voltage (Grids #2 & #3)	500 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	160 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	250 max.	watts
Screen Input	30 max.	watts
Plate Dissipation	85 max.	watts
Typical Operation:		
D-C Plate Voltage	1250 1600	volts
D-C Screen Voltage ##	{ 15000 20000	ohms
	{ 130 130	volts
D-C Grid Voltage ▲	{ -180 -180	volts
	{ 4000 4000	ohms
Peak R-F Grid Voltage	305 320	volts
D-C Plate Current	150 150	ma.
D-C Screen Current	75 75	ma.
D-C Grid Current	45 45	approx.ma.
Driving Power	15 15	approx.watts
Power Output	125 155	approx.watts

Preferably from unmodulated plate-voltage supply through resistor.

▲ obtained from grid resistor of value shown, or by partial self-bias methods.

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telephony*Pentode Connection**Key-down conditions per tube without modulation §*

D-C Plate Voltage	2000 max.	volts
D-C Suppressor Voltage (Grid #3)	500 max.	volts
§ See next page. ← Indicates a change.		

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R-F POWER AMPLIFIER PENTODE

(continued from preceding page)

D-C Screen Voltage (Grid #2)	600 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	175 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	350 max.	watts
Suppressor Input	10 max.	watts
Screen Input	30 max.	watts
Plate Dissipation	125 max.	watts

Typical Operation:

D-C Plate Voltage	1250	1500	2000	volts
D-C Suppressor Voltage	40	40	40	volts
D-C Screen Voltage \blacklozenge	500	500	500	volts
D-C Grid Voltage \blacksquare	-90	-90	-90	volts
	415	415	415	ohms
	7500	7500	7500	ohms
Peak R-F Grid Voltage	175	175	175	volts
D-C Plate Current	160	160	160	ma.
D-C Screen Current	45	45	45	ma.
D-C Grid Current	12	12	12	approx.ma.
Driving Power	2	2	2	approx.watts
Power Output	130	160	210	approx.watts

\blacksquare obtained from fixed supply, cathode resistor (#15), by grid resistor (7500), or by combination methods.

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Tetrode Connection - Grids #2 & #3 tied together

Key-down conditions per tube without modulation \S

D-C Plate Voltage	2000 max.	volts
D-C Screen Voltage (Grids #2 & #3)	600 max.	volts
D-C Grid Voltage (Grid #1)	-500 max.	volts
D-C Plate Current	175 max.	ma.
D-C Grid Current	50 max.	ma.
Plate Input	350 max.	watts
Screen Input	30 max.	watts
Plate Dissipation	125 max.	watts

Typical Operation:

D-C Plate Voltage	1250	1500	2000	volts
D-C Screen Voltage \blacklozenge	150	150	150	volts
D-C Grid Voltage \oplus	-90	-90	-90	volts
	445	445	445	ohms
	3500	3500	3500	ohms
Peak R-F Grid Voltage	190	190	190	volts
D-C Plate Current	160	160	160	ma.
D-C Screen Current	15	15	15	ma.
D-C Grid Current	28	27	26	approx.ma.
Driving Power	4.6	4.4	4.4	approx.watts
Power Output	130	160	210	approx.watts

\blacklozenge use of series resistor is not recommended.

\oplus obtained from fixed supply, cathode resistor (#45), by grid resistor (3500), or by combination methods.

\leftarrow Indicates a change. \S , **: See next page.



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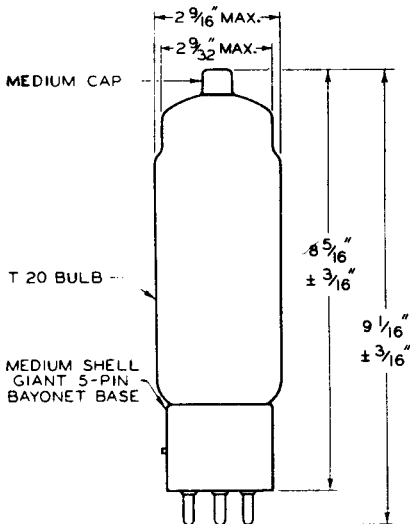
R-F POWER AMPLIFIER PENTODE

(continued from preceding page)

§ Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier condition.

** Preferably obtained from a separate source, or from the plate-voltage supply with a voltage divider.

Data on operating frequencies for the 803 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

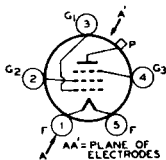


TUBE MOUNTING POSITION

VERTICAL: Base up or down.

92CM-4424R3

BOTTOM VIEW OF SOCKET CONNECTIONS



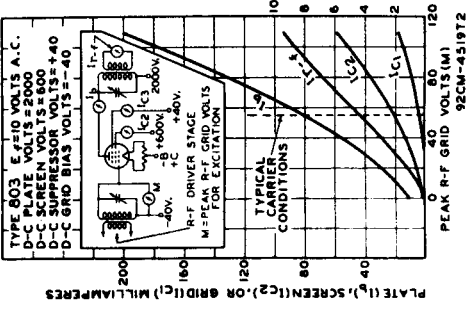
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- Pin 2 - Grid No. 2
- Pin 3 - Grid No. 1
- Pin 4 - Grid No. 3
- Pin 5 - Filament
- Cap - Plate

5J

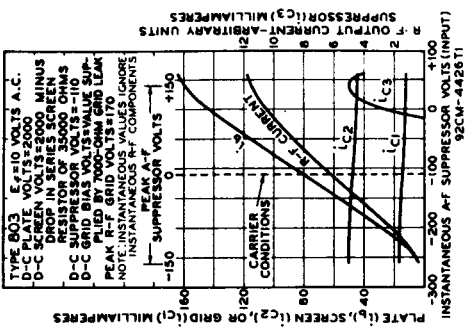
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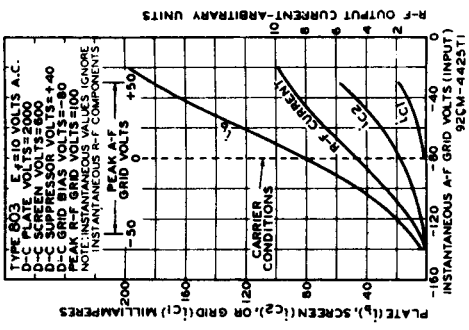
OPERATION CHARACTERISTICS
CLASS B R-F AMPLIFIER



SUPPRESSOR MODULATION CHARACTERISTICS



GRID MODULATION CHARACTERISTICS

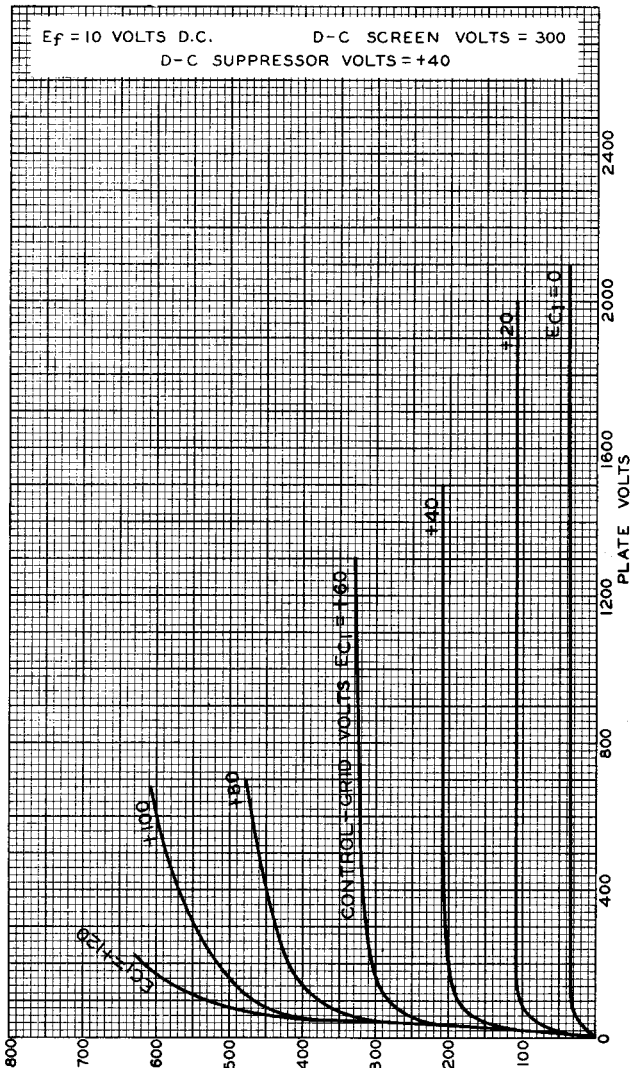




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AVERAGE PLATE CHARACTERISTICS



MAR. 8, 1937

PLATE MILLIAMPERES

RCA RADITRON DIVISION
RCA MANUFACTURING COMPANY, INC.

92C-4749



CHARACTERISTICS CURVES

