



# 6SN7-GTA

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## MEDIUM-MU TWIN TRIODE

### GENERAL DATA

#### Electrical:

Heater, for Unipotential Cathodes:

Voltage . . . . .	6.3 . . . . .	ac or dc volts
Current . . . . .	0.6 . . . . .	amp

Direct Interelectrode Capacitances (With no external shield):

	Unit No. 1	Unit No. 2	
Grid to plate . . . . .	4	3.8	$\mu\text{mf}$
Grid to cathode and heater . .	2.2	2.6	$\mu\text{mf}$
Plate to cathode and heater . .	0.7	0.7	$\mu\text{mf}$

#### Characteristics, Class A<sub>1</sub> Amplifier (Each Unit):

Plate Voltage . . . . .	90	250	volts
Grid Voltage . . . . .	0	-8	volts
Amplification Factor . . . . .	20	20	volts
Plate Resistance (Approx.) . . .	6700	7700	ohms
Transconductance . . . . .	3000	2600	$\mu\text{mhos}$
Plate Current . . . . .	10	9	ma
Plate Current for grid voltage of -12.5 volts . . . . .	-	1.3	ma
Grid Voltage (Approx.) for plate current of 10 $\mu\text{amp}$ . . . . .	-7	-18	volts

#### Mechanical:

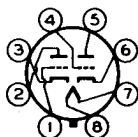
Mounting Position . . . . .	Any
Maximum Overall Length . . . . .	3-5/16"
Maximum Seated Length . . . . .	2-3/4"
Maximum Diameter . . . . .	1-9/32"
Bulb . . . . .	T-9
Base . . . . .	Short Intermediate-Shell Octal 8-Pin with External Barriers (JETEC No. 88-58)
Basing Designation for BOTTOM VIEW . . . . .	8BD

Pin 1 - Grid of  
Unit No. 2

Pin 2 - Plate of  
Unit No. 2

Pin 3 - Cathode of  
Unit No. 2

Pin 4 - Grid of  
Unit No. 1



Pin 5 - Plate of  
Unit No. 1

Pin 6 - Cathode of  
Unit No. 1

Pin 7 - Heater

Pin 8 - Heater

#### AMPLIFIER - Class A<sub>1</sub>

Values are for Each Unit

#### Maximum Ratings, Design-Center Values:

PLATE VOLTAGE . . . . .	450 max.	volts
CATHODE CURRENT . . . . .	20 max.	ma

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## MEDIUM-MU TWIN TRIODE

### PLATE DISSIPATION:

Either plate . . . . .	5 max.	watts
Both plates (Both units operating) . . .	7.5 max.	watts

### PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 <sup>▲</sup> max.	volts

### Maximum Circuit Values:

Grid-Circuit Resistance:		
For fixed-bias operation . . . . .	1 max.	megohm

### Typical Operation as Resistance-Coupled Amplifier:

See RESISTANCE-COUPLED AMPLIFIER CHART No. 29 at front of this Section

### HORIZONTAL DEFLECTION OSCILLATOR

Values are for Each Unit

### Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system<sup>□</sup>

DC PLATE VOLTAGE . . . . .	450 max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE <sup>♠</sup> . . . . .	600 max.	volts
CATHODE CURRENT:		
Peak . . . . .	300 max.	ma
Average . . . . .	20 max.	ma

### PLATE DISSIPATION:

Either plate . . . . .	5 max.	watts
Both plates (Both units operating) . . .	7.5 max.	watts

### PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 <sup>▲</sup> max.	volts

### Maximum Circuit Values:

Grid-Circuit Resistance:		
For fixed-bias, grid-resistor bias, or cathode-bias operation . . . . .	2.2 max.	megohms

### VERTICAL DEFLECTION OSCILLATOR

Values are for Each Unit

### Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system<sup>□</sup>

DC PLATE VOLTAGE . . . . .	450 max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE <sup>♠</sup> . . . . .	400 max.	volts
CATHODE CURRENT:		
Peak . . . . .	70 max.	ma
Average . . . . .	20 max.	ma

<sup>▲</sup>, <sup>□</sup>, <sup>♠</sup>, <sup>#</sup>: See next page.



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## MEDIUM-MU TWIN TRIODE

### PLATE DISSIPATION:

Either plate . . . . .	5 max.	watts
Both plates (Both units operating) . . .	7.5 max.	watts

### PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 <sup>▲</sup> max.	volts

### Maximum Circuit Values:

#### Grid-Circuit Resistance:

For fixed-bias, grid-resistor bias, or cathode-bias operation . . . . .	2.2 max.	megohms
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## VERTICAL DEFLECTION AMPLIFIER

*Values are for Each Unit*

### Maximum Ratings, Design-Center Values Except as Noted:

*For operation in a 525-line, 30-frame system<sup>□</sup>*

DC PLATE VOLTAGE . . . . .	450 max.	volts
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PEAK POSITIVE-PULSE PLATE VOLTAGE <sup>#</sup> (Absolute Maximum) . . .	1500 <sup>■</sup> max.	volts
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PEAK NEGATIVE-PULSE GRID VOLTAGE . . . . .	250 max.	volts
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### CATHODE CURRENT:

Peak . . . . .	70 max.	ma
Average . . . . .	20 max.	ma

### PLATE DISSIPATION:

Either plate . . . . .	5 max.	watts
Both plates (Both units operating) . . .	7.5 max.	watts

### PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 <sup>▲</sup> max.	volts

### Maximum Circuit Values:

#### Grid-Circuit Resistance:

For cathode-bias operation . . . . .	2.2 max.	megohms
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<sup>▲</sup> The dc component must not exceed 100 volts.

<sup>□</sup> As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

<sup>♠</sup> This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

<sup>\*</sup> This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.

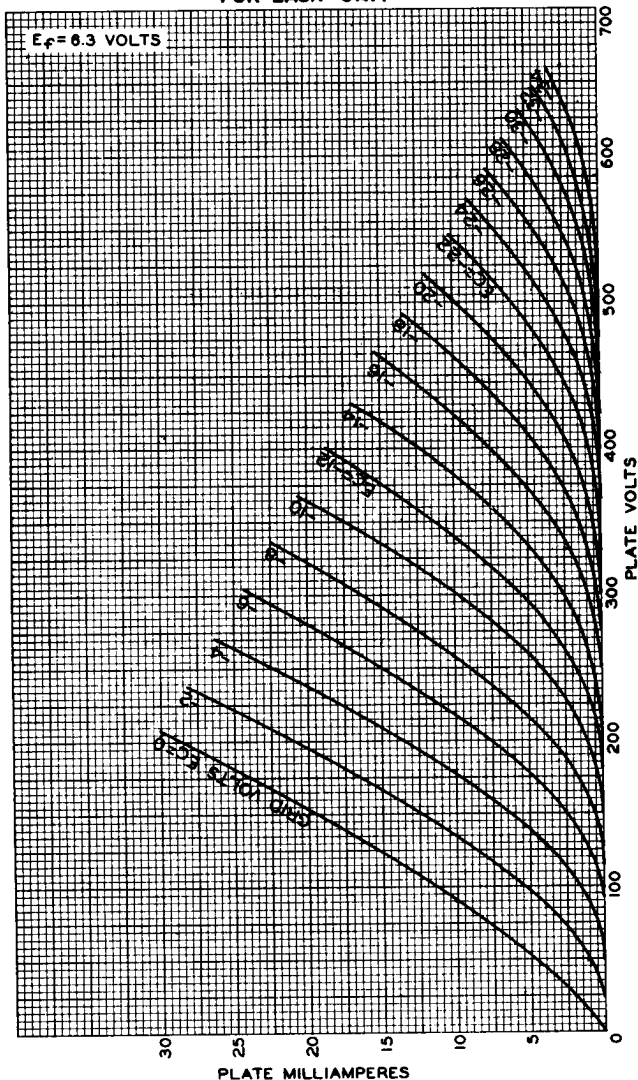
<sup>■</sup> under no circumstances should this absolute value be exceeded.

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## AVERAGE PLATE CHARACTERISTICS FOR EACH UNIT



APRIL 28, 1954

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92CM-8322

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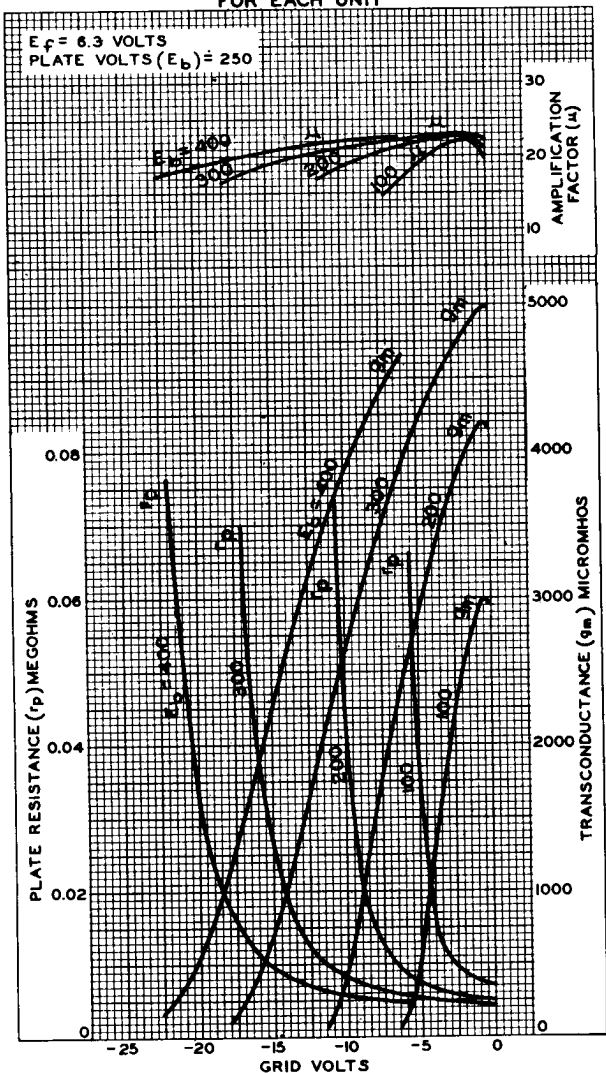


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## AVERAGE CHARACTERISTICS FOR EACH UNIT

$E_f = 6.3$  VOLTS  
PLATE VOLTS ( $E_b$ ) = 250



OCT. 14, 1953

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92CM-8122