



12AU7

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## MEDIUM-MU TWIN TRIODE

9-PIN MINIATURE TYPE

## GENERAL DATA

## Electrical:

Heater, for Unipotential Cathodes:

Heater arrangement	Series	Parallel	
Voltage . . . . .	12.6	6.3	ac or dc volts
Current . . . . .	0.15	0.3	amp

Direct Interelectrode Capacitances (Approx.):

	Unit No.1	Unit No.2	
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## Without external shield:

Grid to plate . . . . .	1.5	1.5	$\mu\text{uf}$
Grid to cathode and heater. . . . .	1.6	1.6	$\mu\text{uf}$
Plate to cathode and heater . . . . .	0.4	0.32	$\mu\text{uf}$

## With external shield, JETEC No.315, connected to cathode:

Grid to plate . . . . .	1.5	1.5	$\mu\text{uf}$
Grid to cathode and heater. . . . .	1.8	1.8	$\mu\text{uf}$
Plate to cathode and heater . . . . .	2	2	$\mu\text{uf}$

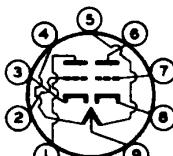
## Characteristics, Class A, Amplifier (Each Unit):

Plate Voltage . . . . .	100	250	volts
Grid Voltage . . . . .	0	-8.5	volts
Amplification Factor. . . . .	20	17	
Plate Resistance (Approx.) . . . . .	6500	7700	ohms
Transconductance. . . . .	3100	2200	$\mu\text{mhos}$
Plate Current . . . . .	11.8	10.5	ma
Grid Voltage (Approx.) for plate current of 10 $\mu\text{amp}$ . . . . .	-	-24	volts

## Mechanical:

Mounting Position . . . . .	Any
Maximum Overall Length. . . . .	2-3/16"
Maximum Seated Length . . . . .	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip). . . . .	1-9/16" $\pm$ 3/32"
Maximum Diameter. . . . .	7/8"
Bulb. . . . .	T-6-1/2
Base. . . . .	Small-Button Noval 9-Pin (JETEC No.E9-1)
Basing Designation for BOTTOM VIEW. . . . .	9A

Pin 1-Plate of Unit No.2	Pin 6-Plate of Unit No.1
Pin 2-Grid of Unit No.2	Pin 7-Grid of Unit No.1
Pin 3-Cathode of Unit No.2	Pin 8-Cathode of Unit No.1
Pins 4 & 9-Heater of Unit No.2	Pin 9-Heater Mid-Tap
Pins 5 & 9-Heater of Unit No.1	



← indicates a change.

MAR. 1, 1955

TUBE DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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## MEDIUM-MU TWIN TRIODE

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

Values are for Each Unit

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

PLATE VOLTAGE . . . . .	300 max.	volts
CATHODE CURRENT . . . . .	20 max.	ma
PLATE DISSIPATION . . . . .	2.75 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. . . . .	0.25 max.	megohm
For cathode-bias operation. . . . .	1.0 max.	megohm

#### Typical Operation as Resistance-Coupled Amplifier:

See RESISTANCE-COUPLED AMPLIFIER CHART No.10  
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. . . . .	300 max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE <sup>●</sup> . . . . .	600 max.	volts
CATHODE CURRENT:		
Peak. . . . .	300 max.	ma
Average . . . . .	20 max.	ma
PLATE DISSIPATION . . . . .	2.75 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 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. . . . .	300 max.	volts
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● 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.

▲, □: See next page.

→ Indicates a change.

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## MEDIUM-MU TWIN TRIODE

PEAK NEGATIVE-PULSE GRID VOLTAGE . . . . .	400 max.	volts
CATHODE CURRENT:		
Peak . . . . .	60 max.	ma
Average. . . . .	20 max.	ma
PLATE DISSIPATION . . . . .		
2.75 max.	watts	
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200▲max.	volts

### Maximum Circuit Values:

#### Grid-Circuit Resistance:

For fixed-bias, grid-resistor bias, or  
cathode-bias operation . . . . . 2.2 max. megohms

## 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 . . . . .	300 max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE*		
(Absolute maximum) . . . . .	1200▲max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE . . . . .	250 max.	volts
CATHODE CURRENT:		
Peak . . . . .	60 max.	ma
Average. . . . .	20 max.	ma
PLATE DISSIPATION . . . . .	2.75 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200▲max.	volts

### Maximum Circuit Values:

#### Grid-Circuit Resistance:

For cathode-bias operation . . . . . 2.2 max. megohms

▲ The dc component must not exceed 100 volts.

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

\* 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.

■ Under no circumstances should this absolute value be exceeded.

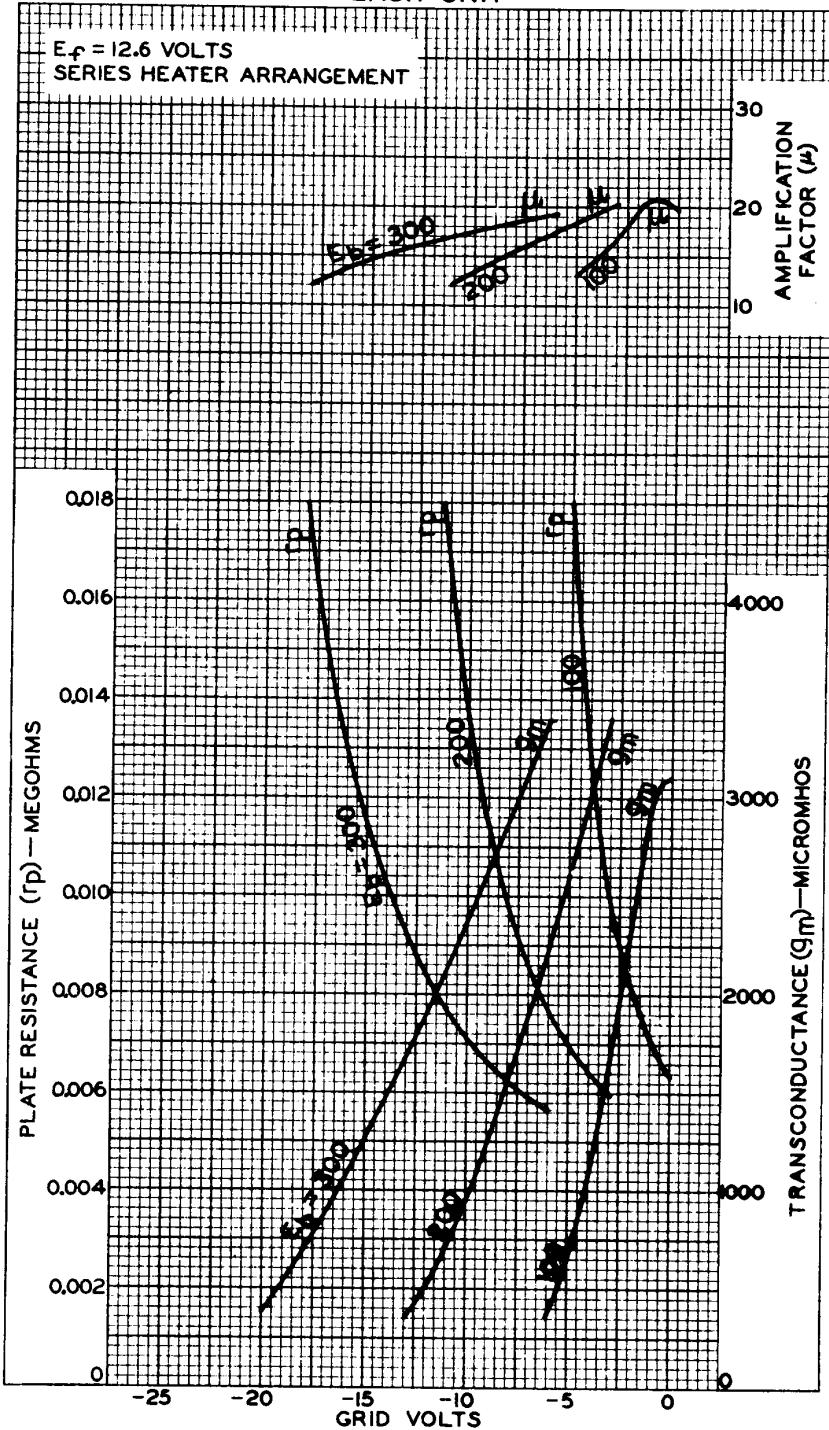
The curves under Type 6C4 also apply to each unit  
of the 12AU7

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## AVERAGE CHARACTERISTICS EACH UNIT



**TUBE DIVISION**

92CM-8564RI