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# MEDIUM-MU TRIODE— SHARP-CUTOFF PENTODE

9-PIN MINIATURE TYPE

*Intended for use in equipment having  
series heater-string arrangement*

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathodes:

Voltage . . . . .	4.7	. . . . .	ac or dc volts
Current . . . . .	0.6	. . . . .	amp
Warm-up time (Average) . . . . .	11	. . . . .	sec

*For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of this Section.*

Direct Interelectrode Capacitances:<sup>o</sup>

#### Triode Unit:

Grid to plate. . . . .	1.7	$\mu$ f
Grid to cathode & pentode grid No.3 & internal shield, and heater. . . . .	1.9	$\mu$ f
Plate to cathode & pentode grid No.3 & internal shield, and heater. . . . .	1.4	$\mu$ f

#### Pentode Unit:

Grid No.1 to plate . . . . .	0.05 max.	$\mu$ f
Grid No.1 to cathode, grid No.2, and heater . . . . .	6	$\mu$ f
Plate to cathode, grid No.3 & triode cathode & internal shield, grid No.2, and heater . . . . .	2.6	$\mu$ f
Plate to cathode, grid No.2, and heater . . . . .	0.15	$\mu$ f
Triode grid to pentode plate . . . . .	0.0078	$\mu$ f
Pentode grid No.1 to triode plate. . . . .	0.0033	$\mu$ f
Pentode plate to triode plate. . . . .	0.06	$\mu$ f

Characteristics, Class A<sub>1</sub> Amplifier:

	Triode Unit	Pentode Unit	
Plate-Supply Voltage . . . . .	200	200	volts
Grid-No.2 Supply Voltage . . . . .	—	150	volts
Grid Voltage . . . . .	-6	—	volts
Cathode Resistor . . . . .	—	180	ohms
Amplification Factor . . . . .	19	—	
Plate Resistance (Approx.) . . . . .	5750	300000	ohms
Transconductance . . . . .	3300	6200	$\mu$ mhos
Plate Current. . . . .	13	9.5	ma
Grid-No.2 Current. . . . .	—	2.8	ma
Grid-No.1 Voltage (Approx.) for plate $\mu$ a = 10. . . . .	-19	-8	volts

<sup>o</sup>: See next page.

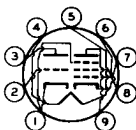
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### Mechanical:

Operating 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" ± 3/32"
Diameter . . . . .	0.750" to 0.875"
Dimensional Outline . . . . .	See General Section
Bulb . . . . .	T6-1/2
Base . . . . .	Small-Button Noval 9-Pin (JETEC No. E9-1)
Basing Designation for BOTTOM VIEW . . . . .	9EC

Pin 1 - Pentode  
Grid No. 3,  
Triode  
Cathode,  
Internal  
Shield

Pin 2 - Triode Grid  
Pin 3 - Triode Plate  
Pin 4 - Heater



Pin 5 - Heater  
Pin 6 - Pentode  
Grid No. 1

Pin 7 - Pentode  
Cathode

Pin 8 - Pentode  
Grid No. 2

Pin 9 - Pentode  
Plate

### AMPLIFIER — Class A<sub>1</sub>

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

	Triode Unit	Pentode Unit	
PLATE VOLTAGE . . . . .	300 max.	300 max.	volts
GRID-No. 2 (SCREEN-GRID) SUPPLY VOLTAGE . . . . .	-	300 max.	volts
GRID-No. 2 VOLTAGE . . . . .	-	See Grid-No. 2 Input	
<i>Rating Chart at front of Receiving Tube Section</i>			
GRID-No. 1 (CONTROL-GRID) VOLTAGE:			
Positive bias value . . . . .	0 max.	0 max.	volts
GRID-No. 2 INPUT:			
For grid-No. 2 voltages up to 150 volts . . . . .	-	0.5 max.	watt
For grid-No. 2 voltages between 150 and 300 volts . . . . .	-	See Grid-No. 2 Input	
<i>Rating Chart at front of Receiving Tube Section</i>			
PLATE DISSIPATION . . . . .	2.5 max.	2 max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode . . . . .	200 max.	200 max.	volts
Heater positive with respect to cathode . . . . .	200 <sup>▲</sup> max.	200 <sup>▲</sup> max.	volts

<sup>○</sup>, <sup>▲</sup>: See next page.



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## MEDIUM-MU TRIODE — SHARP-CUTOFF PENTODE

### Maximum Circuit Values:

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Grid-No.1-Circuit Resistance:*			
For fixed-bias operation . . .	0.5 max.	0.25 max.	megohm
For cathode-bias operation . .	1 max.	1 max.	megohm

○ without external shield.

▲ The dc component must not exceed 100 volts.

\* If either unit is operated at maximum rated conditions, grid-No.1-circuit resistances for both units should not exceed the stated values.