



6AX8

# 6AX8 MEDIUM-MU TRIODE— SHARP-CUTOFF PENTODE

9-PIN MINIATURE TYPE

## GENERAL DATA

**Electrical:**

Heater, for Unipotential Cathodes:

Voltage (AC or DC) . . . . .	6.3	volts
Current . . . . .	0.45	amp

Direct Interelectrode Capacitances:<sup>0</sup>*Triode Unit:*

Grid to plate . . . . .	1.8	$\mu\text{f}$
Grid to cathode and heater. . . . .	2.5	$\mu\text{f}$
Plate to cathode and heater . . . . .	1	$\mu\text{f}$

*Pentode Unit:*

Grid No.1 to plate. . . . .	0.006 max.	$\mu\text{f}$
Grid No.1 to cathode & grid No.3 & internal shield, grid No.2, and heater. . . . .	5	$\mu\text{f}$
Plate to cathode & grid No.3 & internal shield, grid No.2, and heater. . . . .	3.5	$\mu\text{f}$
Heater to cathode (Each unit) . . . . .	3.5*	$\mu\text{f}$

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

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Plate Supply Voltage. . . . .	150	250	volts
Grid-No.2 Supply Voltage. . . . .	—	110	volts
Cathode Resistor. . . . .	56	120	ohms
Amplification Factor. . . . .	40	—	
Plate Resistance (Approx.) . . . . .	0.005	0.4	megohm
Transconductance. . . . .	8500	4800	$\mu\text{hos}$
Plate Current . . . . .	18	10	ma
Grid-No.2 Current . . . . .	—	3.5	ma
Grid-No.1 Voltage (Approx.) for plate $\mu\text{a} = 10$ . . . . .	-12	-12	volts

**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" $\pm$ 3/32"
Diameter. . . . .	0.750" to 0.875"
Dimensional Outline . . . . .	See General Section
Bulb. . . . .	T6-1/2
Base. . . . .	Small-Button Noval 9-Pin (JEDEC No. E9-1)

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**MEDIUM-MU TRIODE—  
SHARP-CUTOFF PENTODE**

Basing Designation for BOTTOM VIEW. . . . . 9AE

- Pin 1—Triode Plate
- Pin 2—Pentode  
Grid No.1
- Pin 3—Pentode  
Grid No.2
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Pentode Plate



- Pin 7—Pentode  
Cathode,  
Pentode  
Grid No.3,  
Internal  
Shield
- Pin 8—Triode Cathode
- Pin 9—Triode Grid

**AMPLIFIER — Class A<sub>1</sub>**

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

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
PLATE VOLTAGE. . . . .	300 max.	300 max.	volts
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE . . . . .	—	300 max.	volts
GRID-No.2 VOLTAGE. . . . .	—	<i>See Grid-No.2 Input</i>	
<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. . . . .	—	<i>See Grid-No.2 Input</i>	
<i>Rating Chart at front of Receiving Tube Section</i>			
PLATE DISSIPATION. . . . .	2.7 max.	2.8 max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode . . . . .	90 max.	90 max.	volts
Heater positive with respect to cathode . . . . .	90 max.	90 max.	volts

**Maximum Circuit Values:**

	<i>Triode Unit</i>	<i>Pentode Unit</i>	
Grid-No.1 Circuit Resistance:			
For fixed-bias operation . . . . .	0.1 max.	0.1 max.	megohm
For cathode-bias operation . . . . .	0.5 max.	0.5 max.	megohm

<sup>0</sup> with external shield JEDEC No.315 connected to cathode of unit under test except as noted.  
<sup>•</sup> with external shield JEDEC No.315 connected to ground.