

HIGH-MU TWIN-TRIODE TYPES 12AX7 AND 12AX7A

The 12AX7 and 12AX7A are 9-pin miniature twin triode types designed for service as a voltage amplifier or phase inverter. They may also be used as a multivibrator or oscillator in industrial control equipment.

The 12AX7A features several design and processing improvements resulting in lower hum and microphonic noise. An improvement in the performance of a high gain, low level, audio pre-amplifier will result from replacement of a type 12AX7 with a type 12AX7A.

ELECTRICAL

Cathode.....	Coated Unipotential		
Heater:	Series	Parallel	
Voltage (ac or dc)	12.6	6.3	Volts
Current	0.15	0.30	Ampere
Direct Interelectrode Capacitances (Unshielded):			
	Unit 1	Unit 2	
Grid to Plate	1.7	1.7	$\mu\mu\text{f}$
Input.....	1.6	1.6	$\mu\mu\text{f}$
Output.....	0.46	0.34	$\mu\mu\text{f}$

MECHANICAL

Bulb.....	T-6½
Base.....	Small-Button Noval 9-Pin
Outline	6-2
Basing.....	9A
Mounting Position	Any

AMPLIFIER - CLASS A₁ Each Unit

MAXIMUM RATINGS

Design-Maximum Values

Plate Voltage	330	max.	Volts
Plate Dissipation.....	1.2	max.	Watts
Grid Voltage:			
Negative Bias Value	-55	max.	Volts
Positive Bias Value.....	0	max.	Volts
Heater-Cathode Voltage:			
Heater Negative with Respect to Cathode			
Total DC + Peak	200	max.	Volts
Heater Positive with Respect to Cathode			
DC Component	100	max.	Volts
Total DC + Peak	200	max.	Volts

TYPICAL OPERATION

Plate Voltage	100	250	Volts
Grid Voltage.....	-1	-2	Volts
Amplification Factor.....	100	100	-
Plate Resistance	80000	62500	Ohms
Transconductance	1250	1600	μmhos
Plate Current	0.5	1.2	Ma.

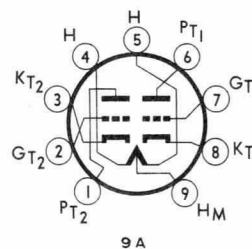
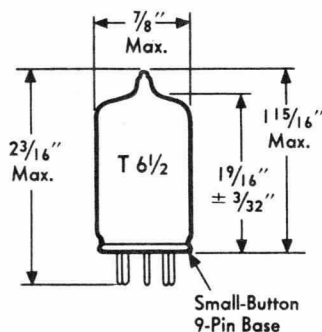
EQUIVALENT NOISE AND HUM VOLTAGE

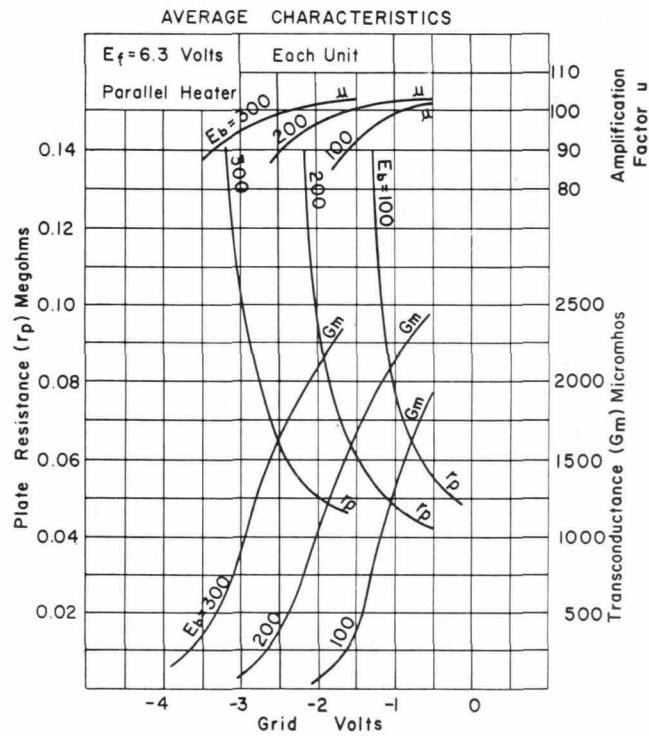
Each Unit, Referenced to Grid,

Average RMS Value (Note 1)	1.8	μVolts
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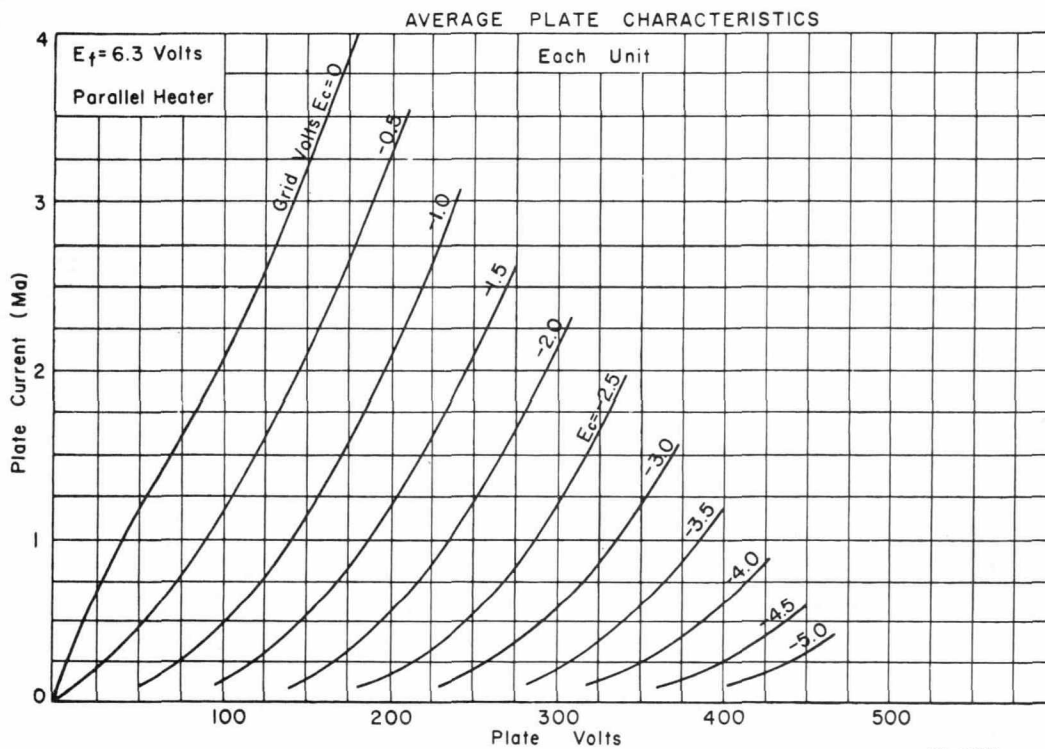
NOTE

1. Heater Volts = 6.3 (ac), heater transformer CT grounded, Plate Supply Volts = 250, Plate Load Ohms = 100000, Cathode Bias Ohms = 2700, Cathode Bypass μf = 100, Grid Resistor = 0, Measured from 25 to 10000 cps.





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