



12AZ7-A

HIGH-MU TWIN TRIODE

9-Pin Miniature Type

RCA-12AZ7-A is a general-purpose high-mu twin triode of the 9-pin miniature type intended for a wide variety of applications in vhf television receivers. This tube is especially useful in color-demodulator and audio-amplifier circuits, frequency-converter circuits, and direct-coupled cathode-drive rf-amplifier circuits.

The 12AZ7-A has a separate base-pin terminal for each cathode for flexibility of circuit arrangement, and a mid-tapped heater to permit operation from either a 12.6-volt or 6.3-volt supply.

The 12AZ7-A is like the 12AZ7 except that the 12AZ7-A heater has a controlled warm-up time to insure dependable performance in television receivers using series heater-string arrangements.

Bulb. T6-1/2
Base. Small-Button Noval 9-Pin (JEDEC No. E9-1)

AMPLIFIER — Class A₁

Values are for Each Unit

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE.	330	max.	volts
GRID VOLTAGE:			
Negative bias value.	55	max.	volts
PLATE DISSIPATION.	2.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200 ^b	max.	volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.25	max.	megohm
For cathode-bias operation	1	max.	megohm

^a With external shield JEDEC No. 315 connected to cathode of unit under test.

^b DC component must not exceed 100 volts.

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Heater arrangement	Series	Parallel	
Voltage (AC or DC)	12.6 ± 10%	6.3	volts
Current.	0.225	0.450 ± 6%	amp
Warm-up Time (Average)	—	11	sec

Direct Interelectrode Capacitances (Approx.):

	Without External Shield	With External Shield ^a	
Grid to plate (Each unit)	2	1.9	μμf
Grid to cathode and heater (Each unit)	2.6	2.8	μμf
Plate to cathode and heater (Unit No.1)	0.44	1.4	μμf
Plate to cathode and heater (Unit No.2)	0.36	1.6	μμf

Characteristics, Class A₁ Amplifier (Each Unit):

Plate-Supply Voltage.	100	250	volts
Cathode Resistor.	270	200	ohms
Amplification Factor.	60	60	
Plate Resistance (Approx.).	15000	10900	ohms
Transconductance.	4000	5500	μmhos
Plate Current	3.7	10	ma
Grid Voltage (Approx.) for plate current of 10 μa.	-5	-12	volts

Mechanical:

Operating Position.	Any
Maximum Overall Length.	2-3/16"
Maximum Seated Length	1-15/16"
Length from Base Seat to Bulb Top (Excluding tip)	1-9/16" ± 3/32"
Diameter:	
Minimum	0.750"
Maximum	0.875"

OPERATING CONSIDERATIONS

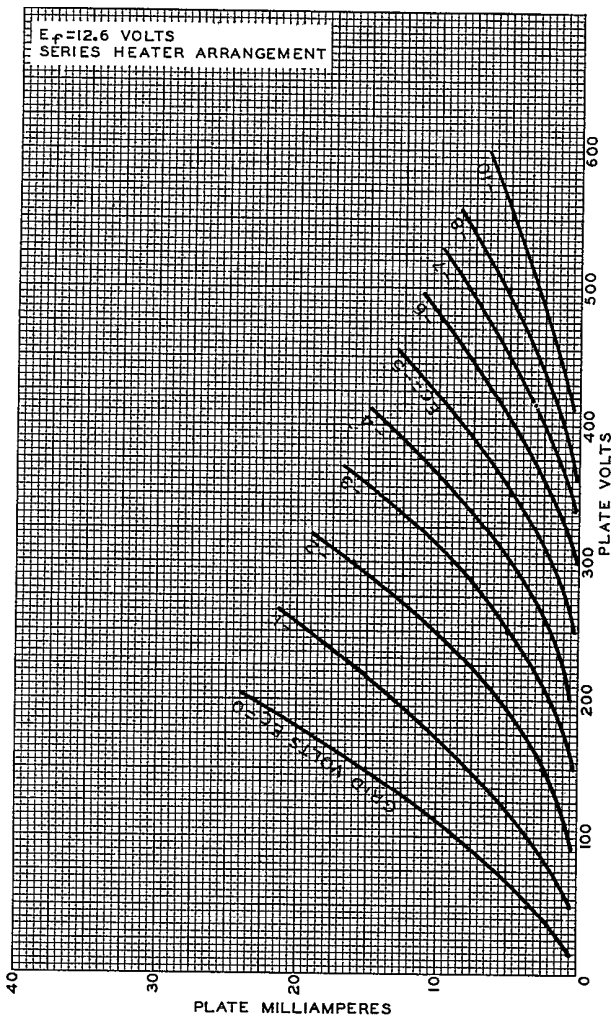
The maximum ratings in the tabulated data are established in accordance with the following definition of the *Design-Maximum Rating System* for rating electron tubes.

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron device of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

The device manufacturer chooses these values to provide acceptable serviceability of the device, taking responsibility for the effects of changes in operating conditions due to variations in device characteristics.

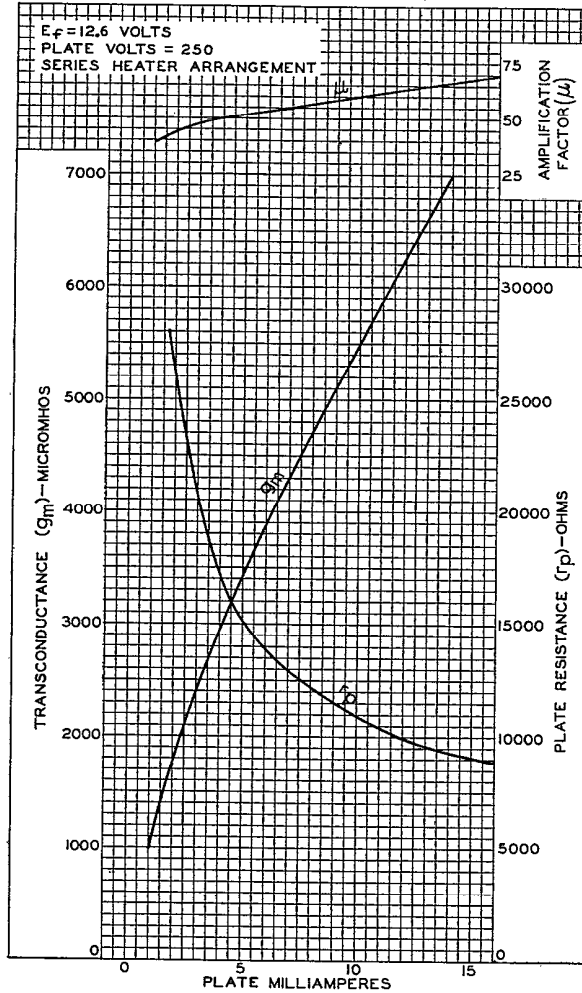
The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey device under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.

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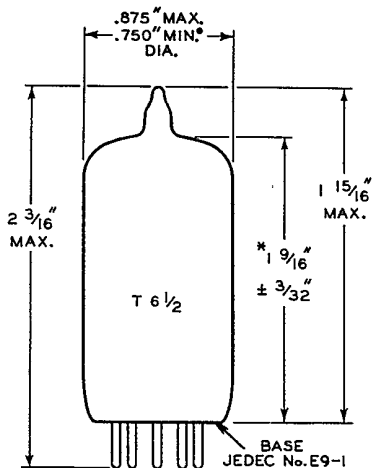
Fig. 1 - Average Plate Characteristics of Type 12AZ7-A.



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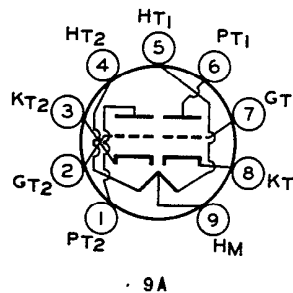
Fig. 2 - Average Characteristics of Type 12AZ7-A.

DIMENSIONAL OUTLINE



* APPLIES IN ZONE STARTING 0.375" FROM BASE SEAT. MEASURED FROM BASE SEAT TO BULB-TOP LINE AS DETERMINED BY RING GAUGE OF 7/16" I.D.

**BASING DIAGRAM
Bottom View**



- PIN 1: PLATE OF TRIODE UNIT No. 2
- PIN 2: GRID OF TRIODE UNIT No. 2
- PIN 3: CATHODE OF TRIODE UNIT No. 2
- PINS 4 & 9: HEATER OF TRIODE UNIT No. 2
- PINS 5 & 9: HEATER OF TRIODE UNIT No. 1
- PIN 6: PLATE OF TRIODE UNIT No. 1
- PIN 7: GRID OF TRIODE UNIT No. 1
- PIN 8: CATHODE OF TRIODE UNIT No. 1
- PIN 9: HEATER TAP