



COMPACTRON TRIODE-PENTODE

DESCRIPTION AND RATING

The 6T9 is a compactron containing a high-mu triode and a power pentode. The triode is intended for audio voltage-amplifier service and the pentode for audio power-amplifier service.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC* . . . 6.3±0.6 Volts

Heater Current† 0.93 Amperes

Direct Interelectrode Capacitances‡

Pentode Section

Grid-Number 1 to Plate:

(Pg1 to Pp) 0.2 pf

Input: Pg1 to (h + Pk + Pg2 + b.p. + i.s.) 11 pf

Output: Pp to (h + Pk + Pg2 + b.p. + i.s.) 11 pf

Triode Section

Grid to Plate: (Tg to Tp) 2.6 pf

Input: Tg to (h + Tk + i.s.) 3.4 pf

Output: Tp to (h + Tk + i.s.) 1.1 pf

MECHANICAL

Operating Position - Any

Envelope - T-9, Glass

Base - E12-70, Button 12-Pin

Outline Drawing - EIA 9-58

Maximum Diameter 1.188 Inches

Maximum Over-all Length. 2.375 Inches

Maximum Seated Height 2.000 Inches

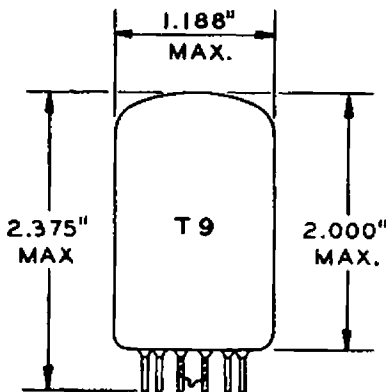
MAXIMUM RATINGS

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

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

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

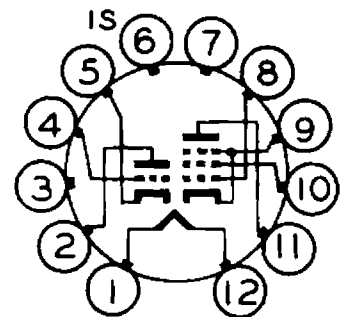
PHYSICAL DIMENSIONS



TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Triode Plate
- Pin 3 - No Connection
- Pin 4 - Triode Grid
- Pin 5 - Triode Cathode
- Pin 6 - Internal Shield
- Pin 7 - No Connection
- Pin 8 - Pentode Grid Number 1
- Pin 9 - Pentode Cathode and Beam Plates
- Pin 10 - Pentode Grid Number 2 (Screen)
- Pin 11 - Pentode Plate
- Pin 12 - Heater

BASING DIAGRAM



EIA 12FM



MAXIMUM RATINGS (Cont'd)

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage	275	300	Volts
Screen Voltage.	275	---	Volts
Positive DC Grid-Number 1 Voltage	0	0	Volts
Plate Dissipation.	12	1.5	Watts
Screen Dissipation	2.0	---	Watts
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak.	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak.	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.25	0.5	Megohms
With Cathode Bias.	0.5	1.0	Megohms
With Self-Bias.	---	¶	Megohms

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

	Pentode Section (Power Amplifier)	Triode Section (Voltage Amplifier)	
Plate Voltage	250	250	Volts
Screen Voltage.	250	---	Volts
Grid-Number 1 Voltage	-8.0	-2.0	Volts
Peak AF Grid Number-1 Voltage.	8.0	---	Volts
Amplification Factor.	---	95	
Plate Resistance, approximate.	100000	45000	Ohms
Transconductance	6500	2100	Micromhos
Plate Current	---	1.5	Milliamperes
Zero-Signal Plate Current	35	---	Milliamperes
Maximum-Signal Plate Current	39	---	Milliamperes
Zero-Signal Screen Current.	2.5	---	Milliamperes
Maximum-Signal Screen Current.	7.0	---	Milliamperes
Load Resistance	5000	---	Ohms
Total Harmonic Distortion, approximate.	10	---	Percent
Maximum-Signal Power Output	4.2	---	Watts

NOTES

- * The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
- † Heater current of a bogey tube at $E_f \approx 6.3$ volts.
- § Without external shield.
- ¶ In applications where the triode section is to be used with self-bias, a maximum resistance of 10 megohms is permissible, provided that the plate supply voltage and plate load resistance are such that the plate dissipation can never exceed 0.25 watts.

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