



DESCRIPTION AND RATING

The 6EB8 is a miniature tube containing a sharp-cutoff pentode and a high-mu triode in one envelope. The pentode section is intended primarily for use as a video amplifier. The triode section is suitable for a wide variety of general-purpose uses.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC* 6.3 ± 0.6 Volts

Heater Current† 0.75 Amperes

Direct Interelectrode Capacitances‡

Pentode Section

Grid-Number 1 to Plate: (Pg1 to Pp), maximum 0.01 pf

Input: Pg1 to (h + Pk + Pg2 + Pg3 + i.s.) 11 pf

Output: Pp to (h + Pk + Pg2 + Pg3 + i.s.) 4.2 pf

Triode Section

Grid to Plate: (Tg to Tp) 4.4 pf

Input: Tg to (h + Tk) 2.4 pf

Output: Tp to (h + Tk) 0.36 pf

Pentode Grid-Number 1 to Triode Plate: (Pg1 to Tp), maximum 0.005 pf

Triode Grid to Pentode Plate: (Tg to Pp), maximum 0.018 pf

Pentode Plate to Triode Plate: (Pp to Tp), maximum 0.17 pf

MECHANICAL

Mounting Position—Any

Envelope—T-6½, Glass

Base—E9-1, Small Button 9-Pin

Outline Drawing EIA 6-3

Maximum Diameter 7/8 Inches

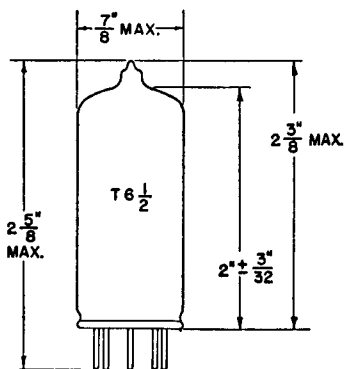
Maximum Over-all

Length 2 5/8 Inches

Maximum Seated

Height 2 3/8 Inches

PHYSICAL DIMENSIONS



EIA 6-3

TERMINAL CONNECTIONS

Pin 1—Triode Cathode

Pin 2—Triode Grid

Pin 3—Triode Plate

Pin 4—Heater

Pin 5—Heater

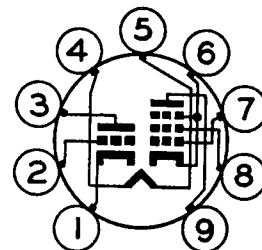
Pin 6—Pentode Cathode, Grid Number 3, and Internal Shield

Pin 7—Pentode Grid Number 1

Pin 8—Pentode Grid Number 2 (Screen)

Pin 9—Pentode Plate

BASING DIAGRAM



EIA 9DX

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

	Pentode Section	Triode Section	
Plate Voltage.....	330	330	Volts
Screen Supply Voltage.....	330	...	Volts
Screen Voltage—See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage.....	0	0	Volts
Plate Dissipation.....	5.0	1.0	Watts
Screen Dissipation.....	1.1	...	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	Megohm
With Cathode Bias.....	1.0	1.0	Megohm

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.

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

	Pentode Section	Triode Section	
Plate Voltage.....	45 200	200	Volts
Screen Voltage.....	125 125	....	Volts
Grid-Number 1 Voltage.....	0§	-2.0	Volts
Cathode-Bias Resistor.....	68	....	Ohms
Amplification Factor.....	....	100	
Plate Resistance, approximate.....	75000	37000	Ohms
Transconductance.....	12500	2700	Micromhos
Plate Current.....	40 25	2.0	Milliamperes
Screen Current.....	15 7.0	....	Milliamperes
Grid-Number 1 Voltage, approximate			
I _b = 100 Microamperes.....	-9	....	Volts
Grid-Number 1 Voltage, approximate			
I _b = 20 Microamperes.....	....	-5	Volts

- * 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 $E_f = 6.3$ volts.
- ‡ Without external shield.
- § Applied for short interval (two seconds maximum) so as not to damage tube.

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SCREEN RATING CHART

