6GN8

TRIODE-PENTODE

DESCRIPTION AND RATING

The 6GN8 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 use as a voltage amplifier or sync separator.

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)	0.1	pf
Input: Pg1 to (h+k+Pg2+Pg3+i.s.)	11	pf
Output: Pp to (h+k+Pg2+Pg3+i.s.)	4.2	pf
Triode Section		
Grid to Plate (Tg to Tp)	4.4	pf
Input: Tg to (h+Tk)	2.2	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

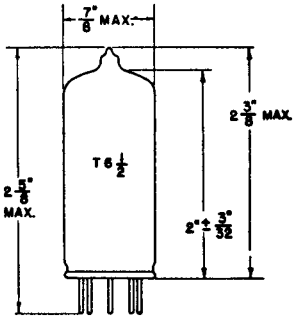
MAXIMUM RATINGS

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

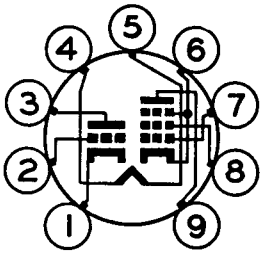


EIA 6-3

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 (Continued)

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	Megohms
With Cathode Bias	1.0	1.0	Megohms

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	Pentode Section		Triode Section	
Plate Voltage	60	200	250	Volts
Screen Voltage	150	150	....	Volts
Grid-Number 1 Voltage	0§	....	−2	Volts
Cathode-Bias Resistor	....	100	.....	Ohms
Amplification Factor	....	.....	100	
Plate Resistance, Approximate	....	60000	37000	Ohms
Transconductance	....	11500	2700	Micromhos
Plate Current	55	25	2.0	Milliamperes
Screen Current	18	5.5	.....	Milliamperes
Grid-Number 1 Voltage, Approximate Ib = 10 Microamperes	....	.....	−5	Volts
Grid-Number 1 Voltage, Approximate Ib = 100 Microamperes	....	−10	.....	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 Ef = 6.3 volts.

‡ Without external shield.

§ Applied for short interval (two seconds maximum) so as not to damage tube.

SCREEN RATING CHART