**COMPACTRON BEAM PENTODE**

**FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS**

- **COLOR TV TYPE**
- **LOW KNEE—MINIMUM "SNIVETS"**
- **28 WATTS PLATE DISSIPATION**
- **LOW GRID DRIVE**

The 6LG6 is a compactron beam-power pentode primarily designed for use as the horizontal-deflection amplifier in color television receivers. It is characterized by having a very low knee voltage, high plate-to-screen ratio, and high peak current capability. These efficiency factors make the 6LG6 widely adaptable for use in circuits using shunt or variable-bias type regulation with B+ supply voltages from 240 to over 400 volts. Its low knee minimizes "snivets" without the necessity of supplying special voltages to the beam plates.

**GENERAL**

**ELECTRICAL**

Cathode - Coated Unipotential  
Heater Characteristics and Ratings  
Heater Voltage, AC or DC* . . . 6.3±0.6 Volts  
Heater Current† . . . . . . . . . . 2.0 Amperes  
Direct Interelectrode Capacitances, approximate§  
Grid-Number 1 to Plate: (g1 to p). 0.8 pf  
Input: g1 to (h + k + g2 + b.p.). 25 pf  
Output: p to (h + k + g2 + b.p.). 13 pf

**MECHANICAL**

Operating Position - Any  
Envelope - T-12, Glass  
Base - E12-74, Button 12-Pin  
Top Cap - C1-1, Small  
Outline Drawing - EIA 12-89  
Maximum Diameter . . . . . . 1.563 Inches  
Minimum Diameter . . . . . . 1.437 Inches  
Maximum Over-all Length . . . 4.125 Inches  
Minimum Seated Height . . . . 3.750 Inches  
Minimum Seated Height . . . . 3.500 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 - Internal Connection - Do Not Use
- Pin 3 - Internal Connection - Do Not Use
- Pin 4 - Cathode and Beam Plates
- Pin 5 - Grid Number 1
- Pin 6 - No Connection
- Pin 7 - Internal Connection - Do Not Use
- Pin 8 - No Connection
- Pin 9 - Internal Connection - Do Not Use
- Pin 10 - Cathode and Beam Plates
- Pin 11 - Grid Number 2 (Screen)
- Pin 12 - Heater
- Cap - Plate

**BASE DIAGRAM**

EIA 12-89

**GENERAL ELECTRIC**
MAXIMUM RATINGS (Cont’d)

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE*—

DESIGN-MAXIMUM VALUES UNLESS OTHERWISE INDICATED

DC Plate-Supply Voltage (Boost + DC Power Supply) ......................................................... 900 Volts
Peak Positive Pulse Plate Voltage (Absolute Maximum Value) ........................................... 7500 Volts
Peak Negative Pulse Plate Voltage ..................................................................................... 100 Volts
Screen Voltage .................................................................................................................. 200 Volts
Peak Negative Grid-Number 1 Voltage .............................................................................. 300 Volts
Plate Dissipation§ ............................................................................................................. 28 Watts
Screen Dissipation ............................................................................................................. 5.0 Watts
DC Cathode Current ......................................................................................................... 315 Milliamperes
Peak Cathode Current ...................................................................................................... 1100 Milliamperes
Heater-Cathode Voltage
  Heater Positive with Respect to Cathode
    DC Component ........................................................................................................... 100 Volts
    Total DC and Peak ................................................................................................... 200 Volts
  Heater Negative with Respect to Cathode
    Total DC and Peak ................................................................................................... 200 Volts
Grid Number 1 Circuit Resistance
  With Feedback Type High Voltage Regulation ................................................................ 1.8 Megohms
  With Shunt-Type High Voltage Regulation (Switching Mode). ....................................... 2.2 Megohms
Bulb TemperatureΔ ........................................... 225 C

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage .................................................................................................................... 6000 50 175 Volts
Screen Voltage .................................................................................................................. 125 125 125 Volts
Grid-Number 1 Voltage ................................................................................................... 0 0 0 Volts
Plate Resistance, approximate ......................................................................................... 7500 Ohms
Transconductance ........................................................................................................... 11500 Micromhos
Plate Current ................................................................................................................... 600 90 180 Milliamperes
Screen Current ................................................................................................................. 42 1.7 Milliamperes
Grid-Number 1 Voltage, approximate
  Ib = 1.0 Milliamperes ................................................................................................... -125 --- -45 Volts
Triode Amplification Factor** ......................................................................................... --- --- 3.6

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 Ef = 6.3 volts.

§ Without external shield.

¶ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

# In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

Δ Measured using a thermocouple attached to a 0.1-inch wide phosphor-bronze ring placed at the hottest location on the bulb.

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

** Triode connection (screen tied to plate) with Eb = Ec2 = 125 volts, and Ec1 = -25 volts.

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AVERAGE TRANSFER CHARACTERISTICS

$E_t = \text{RATED VALUE}$

$E_b = 175 \text{ VOLTS}$

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