6BG6-GA — 19BG6-GA
BEAM PENTODE
FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6BG6-GA is a beam-power pentode designed primarily for use as the horizontal deflection amplifier in television receivers. Electrically and physically, the 6BG6-GA is a replacement for the 6BG6-G; the 6BG6-GA differs primarily from the 6BG6-G by employing a straight-sided T-12 envelope.
Except for heater ratings, the 19BG6-GA is identical to the 6BG6-GA.

GENERAL

ELECTRICAL
Cathode—Coated Unipotential 6BG6-GA 19BG6-GA
Heater Voltage, AC or DC 6.3 18.9 Volts
Heater Current 0.9 0.3 Amperes
Direct Interelectrode Capacitances, approximate* Grid-Number 1 to Plate 0.8 µf
Input 11 µf
Output 6.0 µf

MECHANICAL
Mounting Position—Vertical† Envelope—T-12, Glass
Base—B8-110, Short Medium Shell Octal 8-Pin Top Cap—C1-1, Small

MAXIMUM RATINGS

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE‡ DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED
DC Plate-Supply Voltage (Boost + DC Power Supply) 700 Volts
Peak Positive Pulse Plate Voltage 6600$ Volts
Peak Negative Pulse Plate Voltage 1500 Volts
Screen Voltage 350 Volts
Peak Negative Grid-Number 1 Voltage 300 Volts
Plate Dissipationπ 20 Watts
Screen Dissipation 3.2 Watts
DC Cathode Current 110 Milliamperes
Peak Cathode Current 400 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 0.47 Megohms
Bulb Temperature at Hottest Point 210 C

BASING DIAGRAM

KEY

RETMA SBT

TERMINAL CONNECTIONS
Pin 1—No Connection
Pin 2—Heater
Pin 3—Cathode and Beam Plates
Pin 4—No Connection
Pin 5—Grid Number 1
Pin 6—No Connection
Pin 7—Heater
Pin 8—Grid Number 2 (Screen)
Cap—Plate

PHYSICAL DIMENSIONS

GENERAL ELECTRIC
Supersedes ET-T925, dated 4-55
CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>60</td>
<td>250 Volts</td>
</tr>
<tr>
<td>Screen Voltage</td>
<td>250</td>
<td>250 Volts</td>
</tr>
<tr>
<td>Grid-Number 1 Voltage</td>
<td>0△</td>
<td>-15 Volts</td>
</tr>
<tr>
<td>Plate Resistance, approximate</td>
<td>25000</td>
<td>Ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>6000</td>
<td>Micromhos</td>
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<tr>
<td>Plate Current</td>
<td>180</td>
<td>75 Milliamperes</td>
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<tr>
<td>Screen Current</td>
<td>18</td>
<td>4.0 Milliamperes</td>
</tr>
<tr>
<td>Grid-Number 1 Voltage, approximate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I_b = 1.0 Milliamphere</td>
<td></td>
<td>-45 Volts</td>
</tr>
<tr>
<td>Triode Amplification Factor</td>
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<td>8.0</td>
</tr>
</tbody>
</table>

* Without external shield.

† Horizontal operation is permitted if pins 2 and 7 are in a vertical plane.

‡ 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.

§ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply-voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

π 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.

△ Applied for very short interval so as not to damage tube.

♦ Triode connection (screen tied to plate) with Eb = Ec2 = 250 volts and Ec1 = -15 volts.
**AVERAGE TRANSFER CHARACTERISTICS**

- $E_f =$ RATED VALUE
- $E_b =$ 350 VOLTS

![Graph of Average Transfer Characteristics](image)

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