DESCRIPTION AND RATING

The 6BQ6-GTB is a beam-power pentode designed primarily for use as horizontal-deflection amplifier in television receivers. The tube exhibits high perveance, high plate current at low plate and screen voltages, and a high ratio of plate-to-screen current.

**GENERAL**

**ELECTRICAL**
Cathode—Coated Unipotential
Heater Voltage, AC or DC ........................................ 6.3 Volts
Heater Current .................................................. 1.2 Amperes
Direct Interelectrode Capacitances*
  Grid-Number 1 to Plate ....................................... 0.6 μf
  Input .................................................................... 15 μf
  Output .................................................................. 7.0 μf

**MECHANICAL**
Mounting Position—Any
Envelope T-9
Base—B6-81, or B7-7 Intermediate-Shell Octal 6- or 7-Pin or B6-84, or B7-59 Short Intermediate-Shell Octal 6- or 7-Pin.
Top Cap—C1-3 or C1-33, Skirted Miniature

**MAXIMUM RATINGS**

**HORIZONTAL-DEFLECTION AMPLIFIER SERVICE†**
**DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED**
DC Plate-Supply Voltage (Boost + DC Power Supply) ............. 600 Volts
Peak Positive Pulse Plate Voltage ................................ 6000† Volts
Peak Negative Pulse Plate Voltage ................................. 1250 Volts
Screen Voltage ...................................................... 200 Volts
Peak Negative Grid-Number 1 Voltage ..................... 300 Volts
Plate Dissipation§ .................................................. 11 Watts
Screen Dissipation .................................................. 2.5 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 ............................... 220 °C

**BASING DIAGRAM**

**TERMINAL CONNECTIONS**
Pin 1—No Connection
Pin 2—Heater
Pin 3—No Connection
Pin 4—Grid Number 2 (Screen)
Pin 5—Grid Number 1
Pin 7—Heater
Pin 8—Cathode and Beam Plates
Cap—Plate
Pin 1 omitted on Bases B6-81 and B6-84.

**PHYSICAL DIMENSIONS**

EIA 9-49
or 9-50
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>150</td>
<td>150 Volts</td>
</tr>
<tr>
<td>Grid-Number 1 Voltage</td>
<td>0(\Delta)</td>
<td>-22.5 Volts</td>
</tr>
<tr>
<td>Plate Resistance, approx</td>
<td>14500 Ohms</td>
<td></td>
</tr>
<tr>
<td>Transconductance</td>
<td>5900 Micromhos</td>
<td></td>
</tr>
<tr>
<td>Plate Current</td>
<td>260</td>
<td>57 Milliamperes</td>
</tr>
<tr>
<td>Screen Current</td>
<td>26</td>
<td>2.1 Milliamperes</td>
</tr>
<tr>
<td>Grid-Number 1 Voltage, approx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(I_b = 1.0) Milliampere</td>
<td>-43 Volts</td>
<td></td>
</tr>
<tr>
<td>Triode Amplification Factor‡</td>
<td>4.3</td>
<td></td>
</tr>
</tbody>
</table>

* 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.
‡ 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.
§ 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.
\(\Delta\) Applied for short interval (two seconds maximum) so as not to damage tube.
‡ Triode connection (screen tied to plate) with \(E_b = E_{ce} = 150\) volts and \(E_{cl} = -22.5\) volts.