

**FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS**

The 6DQ6-B is a beam-power pentode primarily designed for use as the horizontal-deflection amplifier in television receivers. Its high zero-bias plate current at low plate and screen voltages makes the tube well suited for use in receivers that operate at low plate-supply voltages. It differs from the 6DQ6-A in having higher ratings and higher zero-bias plate current.

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**GENERAL**

- **ELECTRICAL**
  - Cathode—Coated Unipotential
  - Heater Characteristics and Ratings
  - Heater Voltage, AC or DC*: 6.3 ± 0.6 Volts
  - Heater Current†: 1.2 Amperes
  - Direct Interelectrode Capacitances, approximate‡
    - Grid-Number 1 to Plate: (g1 to p)... 0.5 pf
    - Input: g1 to (h + k + g2 + b.p.)... 15 pf
    - Output: p to (h + k + g2 + b.p.)... 7.0 pf

- **MECHANICAL**
  - Mounting Position—Any
  - Envelope—T-12, Glass
  - Base—B6-122, Short Medium-Shell Octal 6-Pin
    - or B6-148, Short Medium-Shell Octal 6-Pin
    - or B7-111, Short Medium-Shell Octal 7-Pin
    - or B7-119, Short Medium-Shell Octal 7-Pin
  - Top Cap—C1-3, Skirted Miniature
  - Outline Drawing—EIA 12-51
    - Maximum Diameter... 1 5/6 Inches
    - Maximum Over-all Length... 4 1/4 Inches
    - Maximum Seated Height... 3 1/2 Inches

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**MAXIMUM RATINGS**

- **HORIZONTAL-DEFLECTION AMPLIFIER SERVICE‡—DESIGN-MAXIMUM VALUES**
  - DC Plate-Supply Voltage (Boost + DC Power Supply)... 770 Volts
  - Peak Positive Pulse Plate Voltage... 6500 Volts
  - Peak Negative Pulse Plate Voltage... 1500 Volts
  - Screen Voltage... 220 Volts
  - Peak Negative Grid-Number 1 Voltage... 330 Volts
  - Plate Dissipation #... 18 Watts
  - Screen Dissipation... 3.6 Watts
  - DC Cathode Current... 175 Milliamperes
  - Peak Cathode Current... 610 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... 1.0 Megohms
  - Bulb Temperature at Hottest Point... 220 C

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**PHYSICAL DIMENSIONS**

![Physical Dimensions Diagram](image)

**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

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**BASE DIAGRAM**

![Basing Diagram](image)

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EIA 12-51

Supersedes ET-T1534 dated 3-59
CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
</tr>
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<tbody>
<tr>
<td>Plate Voltage</td>
<td>5000</td>
<td>60</td>
<td>250</td>
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<tr>
<td>Screen Voltage</td>
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<td>150</td>
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<tr>
<td>Grid-Number 1 Voltage</td>
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<tr>
<td>Plate Resistance, approximate</td>
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<td>7300</td>
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<tr>
<td>Transconductance</td>
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<tr>
<td>Plate Current</td>
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<td>1.8</td>
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<tr>
<td>Screen Current</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Grid-Number 1 Voltage, approximate</td>
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<td>4.4</td>
<td></td>
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</tbody>
</table>

* 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 \( E_p = 6.3 \) volts.

‡ Without external shield.

§ Pin 1 is omitted when either a B6-122 or B6-148 base is used.

‖ 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.

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

φ Triode connection (screen tied to plate) with \( E_b = E_c = 150 \) volts, and \( E_c = -22.5 \) volts.

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 those 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.

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