6BE3

COMPACTRON DIODE
FOR TV DAMPING DIODE APPLICATIONS

DESCRIPTION AND RATING

The 6BE3 is a compactron, single heater-cathode type diode intended for service as the damping diode in the horizontal deflection circuit of television receivers.

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‡
   Cathode to Plate and Heater:
   k to (p + h) . . . . . . . 10 pf
   Plate to Cathode and Heater:
   p to (k + h) . . . . . . . 8.0 pf
   Heater to Cathode: (h to k) . . 3.4 pf

MECHANICAL
Operating Position - Any
Envelope - T-9, Glass
Base - El2-70, Button 12-Pin
Outline Drawing - EIA 9-60
   Maximum Diameter . . . . 1.188 Inches
   Maximum Over-all Length . . 2.875 Inches
   Maximum Seated Height . . . 2.500 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 - No Connection
Pin 3 - No Connection
Pin 4 - Plate
Pin 5 - No Connection
Pin 6 - No Connection
Pin 7 - Cathode
Pin 8 - No Connection
Pin 9 - No Connection
Pin 10 - Plate
Pin 11 - No Connection
Pin 12 - Heater

BASING DIAGRAM

EIA 12BL
MAXIMUM RATINGS (Cont'd)

TV DAMPER SERVICE—DESIGN—MAXIMUM VALUES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Inverse Plate Voltage</td>
<td>5000 Volts</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>6.5 Watts</td>
</tr>
<tr>
<td>Steady-State Peak Plate Current</td>
<td>1200 Milliampere</td>
</tr>
<tr>
<td>DC Output Current</td>
<td>200 Milliampere</td>
</tr>
<tr>
<td>Heater-Cathode Voltage</td>
<td></td>
</tr>
<tr>
<td>Heater Positive with Respect to Cathode</td>
<td></td>
</tr>
<tr>
<td>DC Component</td>
<td>100 Volts</td>
</tr>
<tr>
<td>Total DC and Peak</td>
<td>300 Volts</td>
</tr>
<tr>
<td>Heater Negative with Respect to Cathode</td>
<td></td>
</tr>
<tr>
<td>DC Component</td>
<td>900 Volts</td>
</tr>
<tr>
<td>Total DC and Peak</td>
<td>5000 Volts</td>
</tr>
</tbody>
</table>

AVERAGE CHARACTERISTICS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube Voltage Drop</td>
<td>25 Volts</td>
</tr>
<tr>
<td>$I_b = 350$ Milliampere DC</td>
<td></td>
</tr>
</tbody>
</table>

FOOTNOTES

* 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 $E_f = 6.3$ 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.

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