# 1B3-GT DIODE

## DESCRIPTION AND RATING

FOR TV HIGH-VOLTAGE RECTIFIER APPLICATIONS

The 1B3-GT is a half-wave rectifier designed for use in high-voltage, low-current applications. It is especially suitable for use as the high-voltage rectifier in television receivers to supply power to the anode of television picture tubes.

### GENERAL

#### ELECTRICAL
- Cathode—Coated Filament
- Filament Characteristics and Ratings
- Filament Voltage, AC or DC*......1.25 = 0.2 Volts
- Filament Current†..............0.2 Amperes
- Direct Interelectrode Capacitances, approximate†
  - Plate to All: p to (f+i.s.)..............1.3 pf

#### MECHANICAL
- Mounting Position—Any
- Envelope—T-9, Glass
- Base—B8-6, B6-8, B8-58, B6-60, B5-82, B6-144,
  - B7-166 or B7-211, Octal 5, 6, 7, or 8-Pin
- Top Cap—C1-34, Small
- Outline Drawing—EIA 9-51 or 9-52

### MAXIMUM RATINGS

#### DESIGN-MAXIMUM VALUES

<table>
<thead>
<tr>
<th></th>
<th>Flyback Rectifier</th>
<th>RF Voltage Rectifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Inverse Plate Voltage</td>
<td>33000 Volts</td>
<td></td>
</tr>
<tr>
<td>DC Component</td>
<td>22000 Volts</td>
<td></td>
</tr>
<tr>
<td>Total DC and Peak</td>
<td>26000 Volts</td>
<td></td>
</tr>
<tr>
<td>Steady-State Peak Plate Current</td>
<td>50 Milliamperes</td>
<td></td>
</tr>
<tr>
<td>DC Output Current</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Frequency of Supply Voltage</td>
<td>Maximum</td>
<td>100 Kilocycles</td>
</tr>
<tr>
<td></td>
<td>Minimum</td>
<td>1.5 Kilocycles</td>
</tr>
</tbody>
</table>

### PHYSICAL DIMENSIONS

![Diagram](EIA 9-52)

### TERMINAL CONNECTIONS‡

- Pin 1—Internal Connection
- Pin 2—Filament
- Pin 3—Internal Connection
- Pin 4—No Connection
- Pin 5—Internal Connection
- Pin 6—No Connection
- Pin 7—Filament and Internal Shield
- Pin 8—Internal Connection
- Cap—Plate

### BASING DIAGRAM

![Diagram](EIA 9-52)

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The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

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General Electric

Supersedes ET-T448C dated 12-53
**AVERAGE CHARACTERISTICS**

Tube Voltage Drop, approximate \( I_b = 7.0 \) Milliamperes .................. 100 Volts

* The equipment designer should design the equipment so that filament voltage is centered at the specified bogey value, with filament supply variations restricted to maintain filament voltage within the specified tolerance.

† Filament current of a bogey tube at \( E_f = 1.25 \) volts.

‡ Without external shield.

§ Socket terminals 1, 3, 4, 5, 6, and 8 may be connected to terminal 7 or to a corona shield which connects to terminal 7. Terminals 4 and 6 may be used as tie points for components at or near filament potential.

¶ 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.

Note: The voltages employed in some television receivers and other high-voltage equipment are sufficiently high that high-voltage rectifier tubes may produce soft x-rays which can constitute a health hazard unless such tubes are adequately shielded. The need for this precaution should be considered in equipment design. Relatively simple shielding should prove adequate.

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**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.

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**AVERAGE PLATE CHARACTERISTICS**

\[ E_f = 1.25 \text{ VOLTS} \]

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**RECEIVING TUBE DEPARTMENT**

**GENERAL ELECTRIC**

Owensboro, Kentucky