The 6DA4 is a single heater-cathode type diode for service as the damping diode in the horizontal-deflection circuit of television receivers. It will withstand high pulse voltages between the heater and cathode and high inverse pulse voltages between the plate and cathode. These characteristics make the tube particularly useful in autotransformer deflection systems where high pulse voltages are applied to the cathode of the damper tube.

Except for heater ratings, the 12D4 and 17D4 are identical to the 6DA4. In addition, the 12D4 and 17D4 incorporate a controlled heater-warm-up characteristic which makes them especially suited for use in television receivers with series-connected heaters.

**GENERAL**

**ELECTRICAL**

Cathode—Coated Unipotential

<table>
<thead>
<tr>
<th></th>
<th>6DA4</th>
<th>12D4</th>
<th>17D4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage, AC or DC</td>
<td>6.3</td>
<td>12.6</td>
<td>16.8</td>
</tr>
<tr>
<td>Heater Current</td>
<td>1.2</td>
<td>0.6</td>
<td>0.45</td>
</tr>
<tr>
<td>Heater Warm-up Time*</td>
<td>11</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Direct Interelectrode Capacitances, approximate†

- Cathode to Plate and Heater: 8.0 μf
- Plate to Cathode and Heater: 6.0 μf
- Heater to Cathode: 3.0 μf

**MECHANICAL**

Mounting Position—Any

Envelope—T-9, Glass

Base—B5-82 or B6-8, Intermediate-Shell Octal

or B5-85 or B6-60, Short Intermediate-Shell Octal

**TERMINAL CONNECTIONS**

Pin 1—Internal Connection‡
Pin 2—Internal Connection
Pin 3—Cathode
Pin 5—Plate
Pin 7—Heater
Pin 8—Heater

† Pin 1 omitted on B5-82 and B5-85 bases.

Socket terminals 1, 2, 4, and 6 should not be used.

**PHYSICAL DIMENSIONS**

[Diagram of physical dimensions]
MAXIMUM RATINGS

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>4400 Volts</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>5.5 Watts</td>
</tr>
<tr>
<td>Steady-State Peak Plate Current</td>
<td>900 Milliamperes</td>
</tr>
<tr>
<td>DC Output Current</td>
<td>155 Milliamperes</td>
</tr>
</tbody>
</table>

Heater-Cathode Voltage

- Heater Positive with Respect to Cathode
  - DC Component                               | 100 Volts |
  - Total DC and Peak                          | 300 Volts  |

- Heater Negative with Respect to Cathode
  - DC Component                               | 900 Volts |
  - Total DC and Peak                          | 4400 Volts |

Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur for the types of service for which the tube is rated. Therefore, the equipment designer must establish the circuit design so that initially and throughout equipment life no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

AVERAGE CHARACTERISTICS

Tube Voltage Drop

\[ I_h = \text{250 Milliamperes DC} \]  \hspace{1cm} 22 Volts

* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† 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.

Operation of this tube as a power rectifier is not recommended.
AVERAGE PLATE CHARACTERISTICS

$E_I = \text{RATED VALUE}$