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25DK4

DIODE

FOR HALF-WAVE POWER RECTIFIER APPLICATIONS

The 25DK4 is a miniature half-wave rectifier designed for use in line-operated equipment having series-connected, 150-milliampere heaters. The heater is tapped to allow a portion of it to be used as a current-limiting resistor.

GENERAL

Electrical

Cathode - Coated Unipotential
Heater Characteristics and Ratings (Design-Maximum Rating System)
Heater Voltage, AC or DC
  Between Pins 3 and 4
  Between Pins 3 and 6
Heater Current+

25 Volts
22.5 Volts
0.15±0.01 Amperes

Mechanical

Mounting Position - Any
Envelope - T-5 1/2, Glass
Base E7-1, Miniature Button 7-Pin
Outline Drawing - EIA 5-3

Maximum Diameter
Maximum Over-all Length
Maximum Seated Height

3/4
2 5/8
2 3/8

Inches
Inches
Inches

TERMINAL CONNECTIONS

Pin 1 - No Connection
Pin 2 - No Connection
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate
Pin 6 - Heater Tap
Pin 7 - Cathode

BASING DIAGRAM

EIA 5BQ

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Rectifier Service - Design-Maximum Values

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Inverse Plate Voltage</td>
<td>330 Volts</td>
</tr>
<tr>
<td>Steady-State Peak Plate Current</td>
<td>600 Milliamperes</td>
</tr>
<tr>
<td>DC Output Current</td>
<td>100 Milliamperes</td>
</tr>
<tr>
<td>Heater-Cathode Voltage</td>
<td></td>
</tr>
<tr>
<td>Heater Positive with Respect to Cathode</td>
<td>330 Volts</td>
</tr>
<tr>
<td>Heater Negative with Respect to Cathode</td>
<td>330 Volts</td>
</tr>
</tbody>
</table>

Design-maximum ratings are limiting values of operating and environmental conditions applicable to a bogey 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, taking responsibility for the effects of changes in operating conditions due to variations in 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, variation in characteristics of all other tubes in the equipment, equipment control adjustment, load variation, signal variation, and environmental conditions.

**CHARACTERISTICS AND TYPICAL OPERATION**

Half-Wave Rectifier with Capacitor-Input Filter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Plate-Supply Voltage, RMS</td>
<td>117 Volts</td>
</tr>
<tr>
<td>Filter Input Capacitor</td>
<td>40 Microfarads</td>
</tr>
<tr>
<td>Total Plate-Supply Resistance+</td>
<td></td>
</tr>
<tr>
<td>DC Output Current</td>
<td>90 Milliamperes</td>
</tr>
<tr>
<td>DC Output Voltage at Filter Input</td>
<td>113 Volts</td>
</tr>
<tr>
<td>Tube Voltage Drop</td>
<td>19 Volts</td>
</tr>
<tr>
<td>Ib = 200 Milliamperes DC</td>
<td></td>
</tr>
</tbody>
</table>

* Heater voltage at bogey heater current. The heater tap is provided to allow a portion of the heater to be used as a current-limiting resistor (see schematic). It is not intended for panel-lamp operation.

+ For series heater operation, the equipment designer shall design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.

‡ The portion of the heater between pins 4 and 6 has an approximate resistance of 19 ohms when the output current of the rectifier is 100 milliamperes.
AVERAGE PLATE CHARACTERISTICS

\[ E_f = \text{RATED VALUE} \]

PLATE CURRENT IN MILLIAMPERES

PLATE VOLTAGE IN VOLTS

K-55611-TD135-1

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