DESCRIPTION AND RATING

The 6AL5 is a miniature high-perveance twin diode in which separate cathodes are provided for the two sections. The 6AL5 is suited for a wide variety of applications which include service as a detector in FM and television circuits, automatic-gain-control rectifier, or a low-current power rectifier. Each diode can be used independently of the other or combined in parallel or full-wave arrangements. The resonant frequency of each section of the 6AL5 is approximately 700 megacycles.

The 3AL5, 6AL5 and 12AL5 are alike except for heater ratings and heater-cathode voltage ratings. In addition, the 3AL5, as a result of its controlled heater warm-up characteristic, is suited for use in television receivers which employ series-connected heaters. When the 3AL5 is used in conjunction with other 600-milliampere types which exhibit essentially the same heater warm-up characteristic, heater voltage surges across the individual tubes are minimized during the warm-up period.

GENERAL

ELECTRICAL
Cathode—Coated Unipotential

<table>
<thead>
<tr>
<th></th>
<th>3AL5</th>
<th>6AL5</th>
<th>12AL5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage, AC or DC</td>
<td>3.15</td>
<td>6.3</td>
<td>12.6</td>
</tr>
<tr>
<td>Heater Current</td>
<td>0.6</td>
<td>0.3</td>
<td>0.15</td>
</tr>
<tr>
<td>Heater Warm-up Time*</td>
<td>11</td>
<td></td>
<td>Seconds</td>
</tr>
</tbody>
</table>

With Shield† Without Shield

Direct Interelectrode Capacitances

<table>
<thead>
<tr>
<th></th>
<th>Plate-No. 1 to Cathode-No. 1, Heater, and Internal Shield</th>
<th>Plate-No. 2 to Cathode-No. 2, Heater, and Internal Shield</th>
<th>Cathode-No. 1 to Plate-No. 1, Heater, and Internal Shield</th>
<th>Cathode-No. 2 to Plate-No. 2, Heater, and Internal Shield</th>
<th>Plate-No. 1 to Plate-No. 2, maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.2</td>
<td>3.2</td>
<td>3.6</td>
<td>3.6</td>
<td>0.026</td>
</tr>
<tr>
<td></td>
<td>2.5 µf</td>
<td>2.5 µf</td>
<td>3.4 µf</td>
<td>3.4 µf</td>
<td>0.068 µf</td>
</tr>
</tbody>
</table>

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

PHYSICAL DIMENSIONS

[Diagram of physical dimensions]
MAXIMUM RATINGS

DESIGN-CENTER VALUES
Peak Inverse Plate Voltage ........................................ 330 Volts
AC Plate-Supply Voltage per Plate, RMS.......................... 117 Volts
Steady-State Peak Plate Current per Plate ........................ 54 Milliamperes
DC Output Current per Plate ........................................ 9.0 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

CHARACTERISTICS AND TYPICAL OPERATION

HALF-WAVE RECTIFIER
AC Plate-Supply Voltage per Plate, RMS......................... 117 Volts
Total Plate-Supply Resistance per Plate ......................... 300 Ohms
DC Output Current per Plate .................................... 9.0 Milliamperes
Tube Voltage Drop
   \( I_h = 60 \) Milliamperes DC per Plate ....................... 10 Volts

* Heater warm-up time is defined as the time required in the circuit shown at the right for the voltage across the heater terminals to increase from zero to the heater test voltage (\( V_h \)). For this type, \( E = 12.5 \) volts (RMS or DC), \( V_1 = 2.5 \) volts (RMS or DC), and \( R = 15.8 \) ohms.
† With external shield (RETMA 316) connected to pin 6.