The 6BA6 is a pentode amplifier having remote control grid characteristic and utilizing the miniature construction. As an RF amplifier it is characterized by high transconductance and low grid-plate capacitance.

**Direct Interelectrode Capacitances**

<table>
<thead>
<tr>
<th>Description</th>
<th>With Shield</th>
<th>Without Shield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to Plate: G₄ to P (Max.)</td>
<td>0.0035</td>
<td>0.0035 pf</td>
</tr>
<tr>
<td>Input: G₅ to (H+K+G₂+G₃&amp;15)</td>
<td>5.5</td>
<td>5.5 pf</td>
</tr>
<tr>
<td>Output: P to (H+K+G₂+G₃&amp;15)</td>
<td>5.5</td>
<td>5.0 pf</td>
</tr>
</tbody>
</table>

A: External shield #3 and #6 connected to Pin #7.

**Ratings**

Interpreted according to design maximum system:

- Maximum peak heater-cathode voltage: 200V
- Heater negative with respect to cathode: 200V
- Heater positive with respect to cathode: 200V
- Maximum plate voltage: 330V
- Maximum grid #2 supply voltage: 330V
- Maximum grid #2 voltage: See 5-24
- Maximum grid #3 voltage: See 5-24
- Maximum positive DC grid #1 voltage: 55V
- Maximum negative DC grid #1 voltage: 34V
- Maximum plate dissipation: 34W
- Maximum grid #2 dissipation: See 5-24

C: The DC component must not exceed 100 volts.

**Typical Operating Conditions and Characteristics**

Class A₁ Amplifier

<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>100 V</td>
</tr>
<tr>
<td>Grid #1 Voltage</td>
<td>0 V</td>
</tr>
<tr>
<td>Grid #2 Voltage</td>
<td>100 V</td>
</tr>
<tr>
<td>Cathode bias resistor</td>
<td>68 Ohms</td>
</tr>
<tr>
<td>Plate resistance (approx.)</td>
<td>0.25 mAHOHM</td>
</tr>
<tr>
<td>Transconductance</td>
<td>4.300 MAHOHM</td>
</tr>
<tr>
<td>Plate current</td>
<td>10.8 MA</td>
</tr>
<tr>
<td>Grid #2 current</td>
<td>4.4 MA</td>
</tr>
<tr>
<td>Grid #4 voltage (approx.)</td>
<td>-20 V</td>
</tr>
</tbody>
</table>

--- indicates a change.
6BA6

PENTODE CONNECTION

\[ E_f = 6.3 \text{ Volts} \]
\[ E_{C2} = 100 \text{ Volts} \]
\[ E_{C3} = 0 \text{ Volts} \]

\[ I_b \]

\[ I_{C2} \]

PLATE (I_b) OR GRID #2 (I_{C2}) MILLIAMPERES

\[ 0 \]
\[ 1 \]
\[ 2 \]
\[ 3 \]
\[ 4 \]
\[ 5 \]
\[ 100 \]
\[ 200 \]
\[ 300 \]
\[ 400 \]

PLATE VOLS

GRID #2 MILLIAMPERES

\[ -50 \]
\[ -40 \]
\[ -30 \]
\[ -20 \]
\[ -10 \]
\[ 0 \]

GRID #1 VOLTS

\[ E_{C2} = 250 \text{ Volts Through 49 002 Ohms} \]
\[ E_{C2} = 125 \]
\[ E_{C2} = 100 \]
\[ E_{C2} = 75 \]

6BA6

PENTODE CONNECTION

\[ E_f = 6.3 \text{ Volts} \]
\[ E_{b} = 2.50 \text{ Volts} \]
\[ E_{C3} = 0 \text{ Volts} \]
\[ E_{C2} \]

\[ E_{C2} \]

\[ I_b \]

\[ I_{C2} \]