PENTAGRID MIXER
UNIPOTENTIAL CATHODE
HEATER
6.3 VOLTS 0.3 AMPERE
AC OR DC

METAL SHIELD
7 PIN OCTAL BASE
6L7

GLASS BULB
SMALL 7 PIN OCTAL BASE
6L7G

7T
BOTTOM VIEW
6L7

G-7T
BOTTOM VIEW
6L7G

THE TUNG-SOL 6L7 AND 6L7G IS A MIXER TUBE DESIGNED FOR SERVICE WITH A SEPARATE OSCILLATOR AS THE FIRST DETECTOR IN SUPERHETERODYNE RECEIVERS. THE CONTROL GRID (G) IS OF THE REMOTE CUT-OFF TYPE WHICH ALLOWS THE USE OF A.V.C. AND MINIMIZES CROSS-MODULATION. THE CONTROL GRID (Gm) IS OF THE SHARP CUT-OFF TYPE. THE TUBE MAY BE USED AS A VOLUME EXPANDER OR AS A DOUBLY CONTROLLED GENERAL PURPOSE AMPLIFIER.

RATINGS
CLASS A1 AMPLIFIER

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Plate Voltage</td>
<td>300</td>
</tr>
<tr>
<td>Maximum Screen Voltage</td>
<td>100</td>
</tr>
<tr>
<td>Maximum Plate Dissipation</td>
<td>1.5</td>
</tr>
<tr>
<td>Maximum Screen Dissipation</td>
<td>1.0</td>
</tr>
</tbody>
</table>

MIXER

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Plate Voltage</td>
<td>300</td>
</tr>
<tr>
<td>Maximum Screen Voltage</td>
<td>150</td>
</tr>
<tr>
<td>Maximum Plate Dissipation</td>
<td>1.0</td>
</tr>
<tr>
<td>Maximum Screen Dissipation</td>
<td>1.5</td>
</tr>
</tbody>
</table>

FOR "INTERPRETATION OF RATINGS" REFER TO FRONT OF BOOK.

CONTINUED NEXT PAGE
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A1 AMPLIFIER

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250</td>
</tr>
<tr>
<td>Screen (Gs) Voltage</td>
<td>100</td>
</tr>
<tr>
<td>Control Grid (Gm) Voltage</td>
<td>-3</td>
</tr>
<tr>
<td>Control Grid (G) Voltage</td>
<td>-3</td>
</tr>
<tr>
<td>Plate Current</td>
<td>5.3</td>
</tr>
<tr>
<td>Screen Current</td>
<td>6.5</td>
</tr>
<tr>
<td>Plate Resistance</td>
<td>0.6 MΩ</td>
</tr>
<tr>
<td>Transconductance</td>
<td>1100 μS</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>670 μS</td>
</tr>
<tr>
<td>Transconductance Approx.</td>
<td>475 μS</td>
</tr>
</tbody>
</table>

For control grids (G & Gm) voltages = -6 volts

<table>
<thead>
<tr>
<th>Transconductance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx.</td>
<td></td>
</tr>
</tbody>
</table>

Transconductance between the control grid (G) and the plate (P).

MIXER

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250</td>
</tr>
<tr>
<td>Screen (Gs) Voltage</td>
<td>100</td>
</tr>
<tr>
<td>Oscillator Grid (Gm) Voltage</td>
<td>-10</td>
</tr>
<tr>
<td>Peak Oscillator Voltage</td>
<td>12</td>
</tr>
<tr>
<td>Control Grid (G) Voltage</td>
<td>-3</td>
</tr>
<tr>
<td>Plate Current</td>
<td>2.4</td>
</tr>
<tr>
<td>Screen Current</td>
<td>7.1</td>
</tr>
<tr>
<td>Plate Resistance</td>
<td>&gt; 1000 MΩ</td>
</tr>
<tr>
<td>Conversion Transconductance</td>
<td>375 μS</td>
</tr>
</tbody>
</table>

For control grid (G) voltage = -3 volts

<table>
<thead>
<tr>
<th>Conversion Transconductance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx.</td>
<td></td>
</tr>
</tbody>
</table>

For control grid (G) voltage = -6 volts

<table>
<thead>
<tr>
<th>Conversion Transconductance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx.</td>
<td></td>
</tr>
</tbody>
</table>

For control grid (G) voltage = -15 volts

<table>
<thead>
<tr>
<th>Conversion Transconductance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx.</td>
<td></td>
</tr>
</tbody>
</table>

For control grid (G) voltage = -30 volts

<table>
<thead>
<tr>
<th>Conversion Transconductance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx.</td>
<td></td>
</tr>
</tbody>
</table>

For control grid (G) voltage = -45 volts

Continued next page
TUNG-SOL

DIRECT INTERELECTRODE CAPACITANCES

<table>
<thead>
<tr>
<th></th>
<th>6L7*</th>
<th>6L7G*</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRID (G) TO GRID (GM)\textsuperscript{MAX.}</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>GRID (G) TO PLATE\textsuperscript{MAX.}</td>
<td>0.001</td>
<td>0.005</td>
</tr>
<tr>
<td>GRID (GM) TO PLATE\textsuperscript{MAX.}</td>
<td>0.10</td>
<td>0.24</td>
</tr>
<tr>
<td>GRID (G) TO ALL OTHER ELECTRODES</td>
<td>7.5</td>
<td>6</td>
</tr>
<tr>
<td>GRID (GM) TO ALL OTHER ELECTRODES</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>PLATE TO ALL OTHER ELECTRODES</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

* WITH SHELL CONNECTED TO CATHODE

* WITH EXTERNAL SHIELD CONNECTED TO CATHODE

---

6L7, 6L7G

**E_f** = 6.3 V.

**E_b** = 250 V.

**MIXER**

**CURVE A**

**E_{C2}** & **E_{C4}** = 150 V.

**E_{C3}** = -15 V.

**OSC. VOLTS = 18 PEAK**

**CURVE B**

**E_{C2}** & **E_{C4}** = 100 V.

**E_{C3}** = -10 V.

**OSC. VOLTS = 12 PEAK**

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**CONVERSION TRANSCONDUCTANCE (SC) IN AMPS**

**CONTROL GRID (E_{C1}) VOLTS**

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6L7, 6L7G

$E_f = 6.3$ V.
$E_{C2}$ & $E_{C4} = 100$ V.
$E_b = 250$ V.

AVC CHARACTERISTIC

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