TUNG-SOL

TRIPLE-DIODE TRIODE
MINIATURE TYPE

COATED UNIPOTENTIAL CATHODES

HEATER
6.3 VOLTS 450 MA.
AC OR DC
ANY MOUNTING POSITION

BOTTOM VIEW
SMALL BUTTON
9 PIN BASE

THE 6T8 COMPRISSES THREE HIGH PERVALENCE DIODES AND A HIGH-MU TRIODE IN ONE ENVELOPE WITH THE 9-PIN MINIATURE CONSTRUCTION. ONE OF THE THREE DIODE PLATES HAS AN INDEPENDENT CATHODE PROVIDING SATISFACTORY OPERATION IN BALANCED LOW IMPEDANCE DETECTOR CIRCUITS. THIS TUBE STRUCTURE PERMITS THE CONSTRUCTION OF AM/FM RECEIVERS WITH A MINIMUM OF SWITCHING.

DIRECT INTERELECTRODE CAPACITANCES - APPROX.
WITH NO EXTERNAL SHIELD

GRID TO EACH DIODE PLATE (MAX.) 0.055 μuf
DIODE #1 INPUT: P1 TO (H+K) 3.8 μuf
DIODE #2 INPUT: P2 TO (H+K) 4.5 μuf
DIODE #3 INPUT: P3 TO (H+K) 3.8 μuf
DIODE CATHODE TO ALL: K TO (H+K+P1+P2+P3+P+G) 8.5 μuf

RATINGS
INTERPRETED ACCORDING TO RWA STANDARD M-310

HEATER VOLTAGE 6.3 VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE 90 VOLTS
MAXIMUM PLATE VOLTAGE 500 VOLTS
MAXIMUM POSITIVE DC GRID VOLTAGE 0 VOLTS
MAXIMUM DIODE CURRENT EACH PLATE FOR CONTINUOUS OPERATION 5 MA.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS
CLASS A1 AMPLIFIER

<table>
<thead>
<tr>
<th>HEATER VOLTAGE</th>
<th>6.3</th>
<th>6.3</th>
<th>VOLTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEATER CURRENT</td>
<td>450</td>
<td>450</td>
<td>MA.</td>
</tr>
<tr>
<td>PLATE VOLTAGE</td>
<td>100</td>
<td>250</td>
<td>VOLTS</td>
</tr>
<tr>
<td>GRID VOLTAGE</td>
<td>-1</td>
<td>-3</td>
<td>VOLTS</td>
</tr>
<tr>
<td>PLATE CURRENT</td>
<td>0.6</td>
<td>1</td>
<td>MA.</td>
</tr>
<tr>
<td>PLATE RESISTANCE</td>
<td>54 000</td>
<td>58 000</td>
<td>OHMS</td>
</tr>
<tr>
<td>TRANSCONDUCTANCE</td>
<td>1 300</td>
<td>1 200</td>
<td>ΩMhos</td>
</tr>
<tr>
<td>AMPLIFICATION FACTOR</td>
<td>70</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>AVERAGE DIODE CURRENT WITH 5 VOLTS DC APPLIED</td>
<td>20</td>
<td>20</td>
<td>MA.</td>
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</tbody>
</table>

ONE DIODE HAS A SEPARATE CATHODE, THE OTHER CATHODE IS COMMON TO TWO DIODES AND THE TRIODE UNIT.

IT IS RECOMMENDED THAT DIODE #2 (PIN 2) AND DIODE #3 (PIN 1) BE USED IN A RATIO-DETECTOR CIRCUIT FOR FM.

CONTINUED ON FOLLOWING PAGE

INDICATES A CHANGE OR ADDITION

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# Resistance Coupled Amplifier

<table>
<thead>
<tr>
<th>R1 MEG.</th>
<th>Rg1 MEG.</th>
<th>Rc MEG.</th>
<th>( E_{bb} = 90 ) VOLTS</th>
<th>( E_{bb} = 180 ) VOLTS</th>
<th>( E_{bb} = 300 ) VOLTS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>RK</td>
<td>GAIN</td>
<td>EO</td>
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<tr>
<td>0.10 A</td>
<td>0.10 A</td>
<td></td>
<td>5700</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
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<td>0.24 A</td>
<td>6100</td>
<td>26</td>
<td>9</td>
<td>2700</td>
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<tr>
<td>0.24 A</td>
<td>0.24 A</td>
<td>6100</td>
<td>26</td>
<td>9</td>
<td>2700</td>
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<tr>
<td>0.24 A</td>
<td>0.61 A</td>
<td>10000</td>
<td>34</td>
<td>13</td>
<td>4700</td>
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<tr>
<td>0.51 A</td>
<td>0.51 A</td>
<td>15000</td>
<td>37</td>
<td>14</td>
<td>7500</td>
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<tr>
<td>0.51 A</td>
<td>1.0 A</td>
<td>16000</td>
<td>40</td>
<td>16</td>
<td>8200</td>
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<tr>
<td>0.24 10</td>
<td>0.64 10</td>
<td></td>
<td>31</td>
<td>5</td>
<td>--</td>
</tr>
<tr>
<td>0.24 10</td>
<td>0.61 10</td>
<td></td>
<td>37</td>
<td>7</td>
<td>--</td>
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<tr>
<td>0.51 10</td>
<td>0.51 10</td>
<td></td>
<td>59</td>
<td>7.5</td>
<td>--</td>
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<tr>
<td>0.51 10</td>
<td>1.0 10</td>
<td>42</td>
<td>10</td>
<td>--</td>
<td>54</td>
</tr>
</tbody>
</table>

* A value of \( R_g1 \) is not critical.

* \( R_k \) taken to nearest even value for each case instead of absolute optimum value.

* \( E_O \) is RMS output at 5% total harmonic distortion.

* Gain measured at \( E_O = 2.0 \) volts RMS output.

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**Diagram:**

- Input signal source: \( E_{sig} \)
- Input coupling capacitor: \( C \)
- Input resistor: \( R_{g1} \)
- Feedback resistor: \( R_k \)
- Output coupling capacitor: \( C \)
- Output resistor: \( R_L \)
- Load resistor: \( R_C \)

**Note:** Coupling capacitors (C) should be selected to give desired frequency response. \( R_k \) should be adequately bypassed.

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**Plate Information:**

- Plate: 2085
- Oct. 1, 1948

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- Newark, New Jersey, U.S.A.
6T8 TRIODE UNIT
$E_f = 6.3$ Volts

PLATE MILLIAMPERES

PLATE VOLTS

0 100 200 300 400 500

6T8 EACH DIODE UNIT
$E_f = 6.3$ Volts

DC VOLTS DEVELOPED BY DIODE

RECTIFIED MICROAMPERES

RMS Signal Input = 30 Volts

Resistors in Megohms:
- 1 Meg.
- 0.5 Meg.
- 0.25 Meg.
- 0.1 Meg.

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