THE 6BY6 IS A PENTAGRID AMPLIFIER USING THE 7 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED ESPECIALLY FOR USE AS A GATED AMPLIFIER IN TV RECEIVERS. IN SUCH SERVICE, IT MAY BE USED AS A COMBINED SYNC SEPARATOR AND SYNC CLIPPER.

DIRECT INTERELECTRODE CAPACITANCES
WITH NO EXTERNAL SHIELD

<table>
<thead>
<tr>
<th>Electrode Combination</th>
<th>Capacitance (pF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRID #1 TO PLATE (MAX.)</td>
<td>0.08</td>
</tr>
<tr>
<td>GRID #3 TO PLATE (MAX.)</td>
<td>0.35</td>
</tr>
<tr>
<td>GRID #1 TO GRID #5 (MAX.)</td>
<td>0.22</td>
</tr>
<tr>
<td>GRID #1 TO ALL OTHER ELECTRODES AND HEATER</td>
<td>5.4 pF</td>
</tr>
<tr>
<td>GRID #3 TO ALL OTHER ELECTRODES AND HEATER</td>
<td>6.9 pF</td>
</tr>
<tr>
<td>PLATE TO ALL OTHER ELECTRODES AND HEATER</td>
<td>7.5 pF</td>
</tr>
</tbody>
</table>

HEATER CHARACTERISTICS AND RATINGS

AVERAGE CHARACTERISTICS
6.3 VOLTS
300 MA.

HEATER SUPPLY LIMITS:
VOLTAGE OPERATION
6.3±0.6 VOLTS

MAXIMUM HEATER-CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE
200 VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE
200B VOLTS

MAXIMUM RATINGS

PLATE VOLTAGE
330 VOLTS

GRID #2 & #4 VOLTAGE
SEE RATING CHART

GRID #2 & #4 SUPPLY VOLTAGE
330 VOLTS

GRID #3 VOLTAGE:
NEGATIVE BIAS VALUE
55 VOLTS
POSITIVE BIAS VALUE
0 VOLTS
POSITIVE PEAK VALUE
27 VOLTS

CONTINUED ON FOLLOWING PAGE
TUNG-SOL

MAXIMUM RATINGS - CONT'D.
DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239
GATED AMPLIFIER SERVICE

GRID #1 VOLTAGE:
NEGATIVE BIAS VALUE → 110 VOLTS
PLATE DISSIPATION → 2.3 WATTS
GRID #3 INPUT 0.1 WATT

GRIDS #2 & #4 INPUT:* FOR GRIDS #2 & #4 VOLTAGES UP TO 165 VOLTS 1.1 WATTS FOR GRIDS #2 & #4 VOLTAGES BETWEEN 165 VOLTS AND 330 VOLTS SEE RATING CHART
GRID #1 INPUT 0.1 WATT
GRID #1 OR GRID #3 CIRCUIT RESISTANCE:
FIXED BIAS OPERATION 0.5 MEGOHM
CATHODE BIAS OPERATION 1.0 MEGOHM

TYPICAL OPERATING CHARACTERISTICS
CLASS A1 AMPLIFIER

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE VOLTAGE</td>
<td>250 VOLTS</td>
</tr>
<tr>
<td>GRIDS #2 &amp; #4 VOLTAGE</td>
<td>100 VOLTS</td>
</tr>
<tr>
<td>GRID #3 VOLTAGE</td>
<td>-2.5 VOLTS</td>
</tr>
<tr>
<td>GRID #1 VOLTAGE</td>
<td>-2.5 VOLTS</td>
</tr>
<tr>
<td>GRID #3 TO PLATE TRANSCONDUCTANCE</td>
<td>900 ΜΜΗΜΟΘS</td>
</tr>
<tr>
<td>GRID #1 TO PLATE TRANSCONDUCTANCE</td>
<td>1900 ΜΜΗΜΟΘS</td>
</tr>
<tr>
<td>PLATE CURRENT</td>
<td>6.5 MA.</td>
</tr>
<tr>
<td>GRID #2 &amp; #4 CURRENT</td>
<td>9 MA.</td>
</tr>
</tbody>
</table>

GRID #3 VOLTS (APPROX.) FOR Ib = 35 ΜΑΜΡ.
AND GRID #1 VOLTS = -4
GRID #4 VOLTS (APPROX.) FOR Ib = 35 ΜΑΜΡ.
AND GRID #3 VOLTS = 0

SYNC SEPARATOR AND SYNC CLIPPER

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE VOLTAGE</td>
<td>10 VOLTS</td>
</tr>
<tr>
<td>GRID #3 VOLTAGE</td>
<td>0 VOLTS</td>
</tr>
<tr>
<td>GRID #2 &amp; #4 VOLTAGE</td>
<td>25 VOLTS</td>
</tr>
<tr>
<td>GRID #1 VOLTAGE</td>
<td>0 VOLTS</td>
</tr>
<tr>
<td>PLATE CURRENT</td>
<td>1.4 MA.</td>
</tr>
<tr>
<td>GRIDS #2 &amp; #4 CURRENT</td>
<td>3.5 MA.</td>
</tr>
</tbody>
</table>

GRID #3 BIAS VOLTS (APPROX.) FOR
PLATE VOLTAGE OF 25 VOLTS,
GRIDS #2 & #4 VOLTAGE OF 25 VOLTS,
GRID #1 VOLTAGE OF 0 VOLTS AND
PLATE CURRENT OF 50 ΜΑΜΡ.

GRID #4 BIAS VOLTAGE (APPROX.) FOR
PLATE VOLTAGE OF 25 VOLTS,
GRIDS #2 & #4 VOLTAGE OF 25 VOLTS,
GRID #3 VOLTAGE OF 0 VOLTS AND
PLATE CURRENT OF 50 ΜΑΜΡ.

THE DC COMPONENT MUST NOT EXCEED 100 VOLTS.

→ INDICATES A CHANGE.  * INDICATES AN ADDITION.
6BY6

Grids #2 & #4 Input vs Grids #2 & #4 Voltage

GRIDS #2 & #4 INPUT EXPRESSED AS % OF MAX. GRIDS #2 & #4 INPUT RATING

GRIDS #2 & #4 VOLTAGE EXPRESSED AS % OF MAX. GRIDS #2 & #4 VOLTAGE RATING

6BY6

$E_F = 6.3$ Volts
$E_{C3} = 0$ Volts
Grids #2 & #4 Connected to Plate

PLATE (I_P) + GRIDS #2 & #4 (I_{24A}) MILLIAMPERES

PLATE VOLTS

TUNG-SOL ELECTRIC INC. ELECTRON TUBE DIVISION BLOOMFIELD, NEW JERSEY, U.S.A. JUNE 1, 1954 PLATE #3789