TUNG-SOL

TRIODE PENTODE
MINIATURE TYPE

COATED UNIPO TENTIAL CATHODE

FOR
APPLICATION IN FM
OR TV RECEIVERS
ANY MOUNTING POSITION

THE 5U8 COMBINES TWO ELECTRICALLY INDEPENDENT SECTIONS—A TRIODE AND A PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. BOTH UNITS ARE CAPABLE OF GOOD PERFORMANCE AT THE HIGH FREQUENCIES. THE TUBE MAY BE USED AS A LOCAL OSCILLATOR-PENTODE MIXER IN FM OR TELEVISION RECEIVERS OR IN THE MANY COMBINED FUNCTIONS OF SUCH RECEIVERS IN

DIRECT INTERELECTRODE CAPACITANCES

WITH SHIELD A WITHOUT SHIELD

PENTODE GRID 1 TO PENTODE PLATE: (PG1 TO PP) MAX. 0.007 0.015 pF
PENTODE INPUT: PG1 TO (H+PK+PG2+PG3+1.5) 5.0 5.0 pF
PENTODE OUTPUT: PP TO (H+PK+PG2+PG3+1.5) 3.5 2.6 pF
PENTODE CATHODE TO HEATER: H TO (PK+PG2+1.5) 3.0B 3.0 pF
TRIODE GRID TO TRIODE PLATE: (TG TO TP) 1.8 1.8 pF
TRIODE INPUT: TG TO (TK+H+PK+PG3+1.5) 2.8 2.8 pF
TRIODE OUTPUT: TP TO (TK+H+PK+PG3+1.5) 2.0 1.5 pF
TRIODE CATHODE TO HEATER (TK TO H) 3.0B 3.0 pF
PENTODE GRID TO TRIODE PLATE (PG TO TP) (MAX.) 0.20 0.2 pF
PENTODE PLATE TO TRIODE PLATE (PP TO TP) (MAX.) 0.02 0.1 pF

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS
HEATER WARM-UP TIME: C
HEATER SUPPLY LIMITS:
CURRENT OPERATION
MAXIMUM HEATER CATHODE VOLTAGE: (EACH UNIT)
HEATER NEGATIVE WITH RESPECT TO CATHODE
TOTAL DC AND PEAK
HEATER POSITIVE WITH RESPECT TO CATHODE
DC
TOTAL DC AND PEAK

4.7 VOLTS 600 MA
11 SECONDS
600±40 MA
200 VOLTS
100 VOLTS
200 VOLTS
MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

- PENTODE PLATE VOLTAGE 330 VOLTS
- TRIODE PLATE VOLTAGE 330 VOLTS
- GRID 2 SUPPLY VOLTAGE 330 VOLTS
- GRID 2 VOLTAGE
- PENTODE PLATE DISSIPATION
- GRID 2 DISSIPATION: *
  FOR VOLTAGES UP TO 165 VOLTS 0.55 WATTS
  FOR VOLTAGES BETWEEN 165 & 330 VOLTS
- POSITIVE DC GRID 1 VOLTAGE 0 VOLTS
- POSITIVE DC TRIODE GRID VOLTAGE 0 VOLTS
- TRIODE PLATE DISSIPATION 2.5 WATTS
- PENTODE GRID 1 CIRCUIT RESISTANCE; *
  WITH CATHODE BIAS 1.0 MEGOHM
  WITH FIXED BIAS 0.5 MEGOHM

TYPICAL OPERATING CHARACTERISTICS

CLASS A1 AMPLIFIER

<table>
<thead>
<tr>
<th>TRIODE</th>
<th>PENTODE</th>
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<tbody>
<tr>
<td>PLATE VOLTAGE</td>
<td>125 VOLTS</td>
</tr>
<tr>
<td>GRID 2 VOLTAGE</td>
<td>110 VOLTS</td>
</tr>
<tr>
<td>GRID 1 VOLTAGE</td>
<td>-1.0 VOLTS</td>
</tr>
<tr>
<td>TRANSCONDUCTANCE</td>
<td>2500 µMOS</td>
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<tr>
<td>PLATE CURRENT</td>
<td>9.5 MA</td>
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<tr>
<td>GRID 2 CURRENT</td>
<td>3.5 MA</td>
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<tr>
<td>PLATE RESISTANCE (APPROX.)</td>
<td>5000 µMOS</td>
</tr>
<tr>
<td>AMPLIFICATION FACTOR</td>
<td>0.2 MEGOHM</td>
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<tr>
<td>GRID 1 VOLTAGE (APPROX.) FOR Ib = 20 µA</td>
<td>40</td>
</tr>
<tr>
<td>ZERO BIAS TRANSCONDUCTANCE (WITH Eb = 100 V; Ec2 = 70 V)*</td>
<td>-9 VOLTS</td>
</tr>
<tr>
<td>( * )</td>
<td>5500 µMOS</td>
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</tbody>
</table>

A EXTERNAL SHIELD 315 CONNECTED TO PIN 4.

B EXTERNAL SHIELD 315 CONNECTED TO PIN 6.

C HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE THREE TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

- INDICATES A CHANGE.
* INDICATES AN ADDITION.
5U8

PENTODE UNIT
MIXER CHARACTERISTICS
WITH
SEPARATE OSCILLATOR EXCITATION

$E_f = 4.7$ Volts
$E_b = E_{c2} = 150$ Volts DC
$E_{c3} = 0$ Volts
$R_{c4} = 270,000$ Ohms

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$I_b$

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$I_{c2}$

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$g_c$

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GRID #1 DC SUPPLY VOLTS

CONVERSION TRANSCONDUCTANCE ($g_c$) - MICROMORES

PLATE ($I_b$) OR GRID #2 ($I_{c2}$) MILLIAMPERES

-12.5
-10.0
-7.5
-5.0
-2.5
0

-1750
-17.5
-1500
-15.0
-1250
-12.5
-1000
-10.0
-750
-7.5
-500
-5.0
-250
-2.5
0