The 6LT8 is a miniature tube containing a pentode and two diodes. It is intended for horizontal oscillator and AFC service.

**GENERAL**

**ELECTRICAL**

Cathode - Coated Unipotential

Heater Characteristics and Ratings

<table>
<thead>
<tr>
<th>Series Circuit*</th>
<th>Parallel Circuit†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage, AC or DC . . . 6.3</td>
<td>6.3 ±0.6% Volts</td>
</tr>
<tr>
<td>Heater Current. . . . 0.6±0.04%</td>
<td>0.6% Amperes</td>
</tr>
<tr>
<td>Heater Warm-up Time, AverageΔ.. 11</td>
<td>--- Seconds</td>
</tr>
<tr>
<td>Direct Interelectrode Capacitances**</td>
<td></td>
</tr>
</tbody>
</table>

**Pentode Section**

Grid-Number 1 to Plate: (Pg1 to Pp) . . . 0.065 pf
Input: Pp1 to (b + Pk + Pg2 + Pg3 + i.s.) . . . 11 pf
Output: Pp to (b + Pk + Pg2 + Pg3 + i.s.) . . . 3.6 pf

**Diode Sections**

Plate (Section 1) to Cathode: (Dp1 to Dk) . . . 1.4 pf
Plate (Section 2) to Cathode: (Dp2 to Dk) . . . 1.4 pf
Plate to Plate: (Dp1 to Dp2). . . . 1.4 pf

**MECHANICAL**

Operating Position - Any
Envelope - T-6 1/2, Glass
Base - E9-1, Small Button 9-Pin
Outline Drawing - EIA 6-2

| Maximum Diameter . . . 0.875 Inches |
| Minimum Diameter . . . 0.750 Inches |
| Maximum Over-all Length. 2.187 Inches |
| Maximum Seated Height . 1.937 Inches |

**MAXIMUM RATINGS**

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

**PHYSICAL DIMENSIONS**

**TERMINAL CONNECTIONS**

Pin 1 - Pentode Cathode, Grid Number 3, and Internal Shield
Pin 2 - Pentode Grid Number 2 (Screen)
Pin 3 - Pentode Plate
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Diode Plate (Section 2)
Pin 7 - Diode Cathode
Pin 8 - Diode Plate (Section 1)
Pin 9 - Pentode Grid Number 1

**BASING DIAGRAM**

EIA 9RL
MAXIMUM RATINGS (Cont’d)

DESIGN-MAXIMUM VALUES

Pentode Section

Plate Voltage .................................................. 330 Volts
Screen Supply Voltage ......................................... 330 Volts
Screen Voltage - See Screen Rating Chart
Positive DC Grid-Number 1 Voltage ........................... 0 Watts
Plate Dissipation .................................................. 3.1 Watts
Screen Dissipation ............................................... 0.65 Watts
Heater-Cathode Voltage
  Heater Positive with Respect to Cathode
    DC Component .............................................. 100 Volts
    Total DC and Peak ........................................ 200 Volts
Heater Negative with Respect to Cathode
    Total DC and Peak ........................................ 200 Volts
Grid-Number 1 Circuit Resistance
  With Cathode Bias ........................................... 1.0 Megohms

Diode Sections

Diode Current for Continuous Operation, Each Diode ....... 5.0 Milliamperes

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Pentode Section

Plate Voltage .................................................. 125 Volts
Screen Voltage .................................................. 125 Volts
Cathode-Bias Resistor ......................................... 56 Ohms
Plate Resistance, approximate ................................ 200000 Ohms
Transconductance .............................................. 13000 Micromhos
Plate Current ................................................... 10 Milliamperes
Screen Current ................................................. 3.4 Milliamperes
Grid-Number 1 Voltage, approximate
  Ib = 20 Microamperes ..................................... -3.5 Volts

Diode Sections

Average Diode Current, Each Diode
  With 5 Volts DC Applied ................................... 20 Milliamperes

NOTES

* Operated with the heater in series with the heaters of other tubes having the same bogey heater current.

† Operated with the heater in parallel with the heaters of other tubes having the same bogey heater voltage.

§ For parallel heater operation, the equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

¶ For series heater operation, the equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.

# Heater current of a bogey tube at Ef = 6.3 volts.

△ The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the Bogey heater current.

** Without external shield.
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION

$E_t$ = RATED VALUE
$E_b$ = 125 VOLTS
$E_c3 = 0$ VOLTS

SCREEN CURRENT IN MILLIAMPERES

GRID-NUMBER 1 VOLTAGE IN VOLTS

DECEMBER 1, 1964

AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION

$E_t$ = RATED VALUE
$E_b$ = 125 VOLTS
$E_c3 = 0$ VOLTS

TRANSCONDUCTANCE IN MICROMOHMS

GRID-NUMBER 1 VOLTAGE IN VOLTS

DECEMBER 1, 1964