MECHANICAL DATA

Bulb ........................................... T-5 ½
Base ........................................... E7-1, Miniature Button 7-Pin
Outline ........................................ 5-1
Basing ........................................... 7DK
Cathode ....................................... Coated Unipotential
Mounting Position ......................... Any

RATINGS¹

Operational Altitude ....................... 80,000 Ft.
Radiation Environment
- Total Dosage (Neutrons/Sq. Cm) ........... \(10^{16}\) nvt
- Dose Rate (Neutrons/Sq. Cm/Sec.) ....... \(10^{12}\) nvt

DURABILITY CHARACTERISTICS²

- Impact Acceleration³ ..................... 500 G
- Vibration Acceleration for an Extended Period⁴ .... 2.5 G
- On-Off Heater Cycles⁵ ................... 2000

ELECTRICAL DATA

HEATER CHARACTERISTICS

- Heater Voltage ............................ 6.3 Volts
- Heater Current ............................ 225 mA
- Maximum Heater-Cathode Voltage ......... 100 Volts

CONTROLLED DETRIMENTs

- Minimum Inter electrode Insulation⁶ ...... 100 Megohms
- Maximum Total Grid Current⁷ ........... \(-1.5\) μAcd
- Maximum Vibration Output as Equivalent Grid Voltage⁸ ...... 3.0 mVdc
- Maximum Heater-Cathode Leakage⁹ ....... 10 μAcd

DIRECT INTERELECTRODE CAPACITANCES

<table>
<thead>
<tr>
<th>Shielded¹⁰</th>
<th>Unshielded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to Plate</td>
<td>1.7</td>
</tr>
<tr>
<td>Input: g to (h+k+sld)</td>
<td>3.3</td>
</tr>
<tr>
<td>Output: p to (h+k+sld)</td>
<td>1.8</td>
</tr>
<tr>
<td>Grounded Grid</td>
<td></td>
</tr>
<tr>
<td>Input: k to (g+h+sld)</td>
<td>5.2</td>
</tr>
<tr>
<td>Output: p to (g+h+sld)</td>
<td>3.0</td>
</tr>
<tr>
<td>Heater to Cathode</td>
<td>2.9</td>
</tr>
</tbody>
</table>

RATINGS¹ (Absolute Maximum Values)

- Heater Voltage Variation ............. ±10 % Volts
- Plate Voltage ........................... 330 Vdc
- Average Cathode Current .......... 33 mAcd
- Plate Dissipation ................... 4.4 Watts
- Grid Circuit Resistance ........... 1.0 Megohm

AVERAGE CHARACTERISTICS

Conditions
- Heater Voltage ....................... 6.3 V
- Plate Voltage ......................... 200 Vdc
- Grid Voltage ........................... 0 Vdc
- Cathode Resistor .................... 100 Ohms
- Plate Current .......................... 18 mAcd
- Transconductance ..................... 10,750 μhmhos
- Amplification Factor .................. 55
- Grid Voltage for Ib = 20 μA (Approx.) ...... -7.0 Vdc
NOTES:

1. Limiting values beyond which normal tube life and normal tube performance may be impaired.
2. Tests performed as a measure of the mechanical durability of the tube structure.
3. Force as applied in any direction by the Navy Type High Impact (Flyweight) Shock Machine for Electronic Devices. Shock duration = $\frac{3}{4}$ milliseconds.
4. Vibrational forces applied in any direction for a period of 96 hours.
5. One cycle consists of the application of $E_f = 7.5$ V for one minute and interruption of the filament voltage for four minutes. A voltage of $E_{bb} = 140$ Vdc is applied continuously.
6. Measure with $E_f = 6.3$ V $E_{g-all} = -100$ Vdc; $E_{p-all} = -300$ Vdc; Cathode is positive so that no cathode emission occurs.
7. Measure with $E_f = 6.3$ V; $E_b = 250$ Vdc; $E_c = 0$ Vdc; $R_k = 250$ Ohms.
8. Test with $E_f = 6.3$ V; $E_b = 200$ Vdc; $E_c = 0$ Vdc; $R_k = 100$ Ohms; $R_p = 2,000$ Ohms; $F = 25$ cps; $Acc = 2.5$ G; $C_k = 1,000$ pf.
9. Measure with $E_f = 6.3$ V; $E_{bb} = \pm 100$ Vdc.
10. Capacitances are measured with External Shield No. 316.
AVERAGE PLATE CHARACTERISTICS

AVERAGE TRANSFER CHARACTERISTICS

$E_f = $RATED VALUE
$E_b = 200$ VOLTS