The CK6540 is a heater cathode type sharp cut-off pentode of subminiature construction capable of operation in the VHF region. This tube is characterized by long life and stable performance. It is designed for service where severe conditions of high temperature and mechanical shock or vibration are encountered. A separate terminal connection is provided for Grid #3, which under self-bias conditions can be connected directly to ground, permitting the cathode by-pass capacitor to be omitted for lower grid loading. The flexible terminal leads may be soldered or welded directly to the terminals of circuit components without the use of sockets. Standard inline subminiature sockets may be used by cutting the leads to a suitable length.

The Raytheon CK6540 is manufactured and controlled to meet the applicable MIL-E-1 specification for reliability.

**RATINGS (Design Maximum):**

- Bulb Temperature: 220°C
- Altitude: 60,000 ft.

**ENVIRONMENTAL Tests (Maximum Values):**

- Impact Acceleration (Shock, 3/4 msec. duration): 450 g
- Vibration Acceleration for Extended Periods (Fatigue): 2.5g
  
  (F = 25 min., 60 max., 96 hours.)
- Vibration Output at F=40 Cps, G=15 (Ep): 50 mVdc

**ELECTRICAL DATA**

- Heater Voltage: 6.3 V
- Heater Current: 200 mA

**DIRECT INTERELECTRODE CAPACITANCE: (With 0.405 in. dia. shield)**

- Grid #1 to Plate (max.): 0.03 pf
- Input: 4.8 pf
- Output: 3.5 pf

**RATINGS: (Design Maximum)**

- Heater Voltage: 6.3(+10%) V
- Heater Cathode Voltage: 200 V
  - Heater with Respect to Cathode: 200 V
  - Heater with Respect to cathode: 165 Vdc
- Plate Voltage: 1.1 W
- Plate Power Dissipation: 155 Vdc
- Screen Grid Voltage: 0.40 W
- Screen Grid Power Dissipation: 0 Vdc
- Suppressor Grid Voltage: 1.2 Meg
- Control Grid Resistor: 16.5 mΩdc

**TERMINAL CONNECTIONS**

- Lead 1: Plate
- Lead 2: Grid #2
- Lead 3: Heater
- Lead 4: Heater
- Lead 5: Grid #3
- Lead 6: Cathode
- Lead 7: Grid #1
TYPICAL OPERATION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>120 Vdc</td>
</tr>
<tr>
<td>Plate Current</td>
<td>7.5 mAdc</td>
</tr>
<tr>
<td>Screen Grid Voltage</td>
<td>120 Vdc</td>
</tr>
<tr>
<td>Screen Grid Current</td>
<td>2.6 mAdc</td>
</tr>
<tr>
<td>Suppressor Grid Voltage</td>
<td>0 Vdc</td>
</tr>
<tr>
<td>Control grid voltage</td>
<td>0 Vdc</td>
</tr>
<tr>
<td>Control grid cut-off voltage @ Ib=50 uA</td>
<td>-9.0 Vdc</td>
</tr>
<tr>
<td>Cathode Resistor</td>
<td>200 ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>5000 uhos</td>
</tr>
<tr>
<td>Plate Resistance (rp) (Min.)</td>
<td>0.15 Meg</td>
</tr>
<tr>
<td>Peak positive plate voltage overshoot (max.)</td>
<td>2.0 v</td>
</tr>
</tbody>
</table>

Page 2 of 2