The CK5656 is a heater-cathode type, double tetrode of miniature construction, suitable for push-pull Class A and Class C RF amplifier service up to a frequency of 400 megacycles. The screen grids for the two sections are connected internally and are by-passed to the common cathode terminals by an internal condenser of approximately 15 µfd capacitance. This terminal arrangement, by reducing the RF impedance between the separate screen grids and cathodes, permits the use of push-pull RF circuits which provide higher input impedance and lower plate circuit losses than other miniature tube types in the 200 to 400 megacycle frequency range.

**MECHANICAL DATA**

**ENVIRONMENT:** T - 6½ Glass

**BASE:** Miniature Button 9 - Pin

**TERMINAL CONNECTIONS:**
- Pin 1 Grid #2 (Both Units)
- Pin 2 Grid #1 (Unit #1)
- Pin 3 Grid #1 (Unit #2)
- Pin 4 Heater
- Pin 5 Heater
- Pin 6 Cathode (Both Units)
- Pin 7 Plate (Unit #2)
- Pin 8 Plate (Unit #1)
- Pin 9 Cathode (Both Units)

**MOUNTING POSITION:** Any

**ELECTRICAL DATA**

**DIRECT INTERELECTRODE CAPACITANCES:** Each Unit (Without External Shield) (µfds)
- Grid #1 to Plate 0.06 max.
- Grid #1 to All Others Except Plate 3.6
- Plate to All Others Except Grid 1.5
- Common Screen to Cathode Internal
- By-pass Condenser (approx.) 15

**RATINGS - ABSOLUTE MAXIMUM VALUES - CLASS A1:**
- Heater Voltage (ac or dc) 6.3 ± 10% volts
- Plate Voltage 250 volts
- Grid #2 Voltage 165 volts
- Plate Dissipation, Each Section 3.0 watts
- Grid #2 Dissipation 1.5 watts
- Plate Current, Each Section 20 ma.
- Heater-Cathode Voltage 100 volts
- DC Grid #1 Circuit Resistance, Each Section 100,000 ohms

**CHARACTERISTICS AND TYPICAL OPERATION - CLASS A1:** (Each Unit)
- Heater Voltage (ac or dc) 6.3 volts
- Heater Current (Total For Both Units) 0.40 amps.
- Plate Voltage 150 volts
- Grid #2 Voltage 120 volts
- Grid #1 Voltage -2.0 volts
- Plate Resistance (approx.) 60,000 ohms
- Transconductance 3800 µmhos
- Plate Current 15.3 ma.
- Grid #2 Current 2.7 ma.
- Grid #1 Voltage (approx.) for Plate Current 200 µa.
- -8.5 volts

**RATINGS ABSOLUTE MAXIMUM VALUES - PUSH-PULL CLASS C TELEGRAPHY:** (Cont. Service)

(Values are total for both units unless otherwise noted)
- Heater Voltage (ac or dc) 6.3 ± 10% volts
- Plate Voltage 220 volts
- Grid #2 Voltage 165 volts
- Negative Grid #1 Voltage -50 volts
- Plate Dissipation, Each Section 2.5 watts
- Grid #2 Dissipation 1.5 watts
- Plate Current, Each Section 17.5 ma.
- Grid #1 Current, Each Section 4.0 ma.
- Heater-Cathode Voltage 100 volts
- DC Plate Input Power 7.0 watts
- DC Grid #1 Circuit Resistance, Each Section 50,000 ohms
DOUBLE TETRODE

ELECTRICAL DATA (Cont'd)

RATINGS ABSOLUTE MAXIMUM VALUES - PUSH-PULL CLASS C TELEGRAPHY INTERMITTENT "PUSH-TO-TALK" SERVICE:

(Values are total for both units unless otherwise noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage (ac or dc)</td>
<td>6.3 ± 10% volts</td>
</tr>
<tr>
<td>Plate Voltage</td>
<td>250 volts</td>
</tr>
<tr>
<td>Grid #2 Voltage</td>
<td>165 volts</td>
</tr>
<tr>
<td>Negative Grid #1 Voltage</td>
<td>-50 volts</td>
</tr>
<tr>
<td>Plate Dissipation, Each Section</td>
<td>3.5 watts</td>
</tr>
<tr>
<td>Grid #1 Dissipation</td>
<td>1.8 watts</td>
</tr>
<tr>
<td>Plate Current, Each Section</td>
<td>25 ma</td>
</tr>
<tr>
<td>Grid #1 Current, Each Section</td>
<td>4.0 ma</td>
</tr>
<tr>
<td>Heater - Cathode Voltage</td>
<td>100 volts</td>
</tr>
<tr>
<td>DC Plate Input Power</td>
<td>11 watts</td>
</tr>
<tr>
<td>DC Grid #1 Circuit Resistance, Each Section</td>
<td>50,000 ohms</td>
</tr>
</tbody>
</table>

CHARACTERISTICS AND TYPICAL OPERATION - PUSH-PULL CLASS C 225 MEGACYCLE RF AMPLIFIER

INTERMITTENT "PUSH-TO-TALK" SERVICE:

(Values are total for both units unless otherwise noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage (ac or dc)</td>
<td>6.3 volts</td>
</tr>
<tr>
<td>Heater Current</td>
<td>0.40 amps</td>
</tr>
<tr>
<td>Plate Voltage</td>
<td>220 volts</td>
</tr>
<tr>
<td>Grid #2 Voltage (approx.)</td>
<td>110 volts</td>
</tr>
<tr>
<td>DC Grid #1 Voltage</td>
<td>-15 volts</td>
</tr>
<tr>
<td>or Separate Grid #1 Resistance</td>
<td>5,000 ohms</td>
</tr>
<tr>
<td>for Each Section</td>
<td></td>
</tr>
<tr>
<td>Peak RF Grid #1 to Grid #1 Voltage</td>
<td>50.0 volts</td>
</tr>
<tr>
<td>Plate Current</td>
<td>45 ma</td>
</tr>
<tr>
<td>Grid #2 Current</td>
<td>10.5 ma</td>
</tr>
<tr>
<td>Grid #1 Current, Each Section</td>
<td>3.0 ma</td>
</tr>
<tr>
<td>DC Plate Input Power</td>
<td>10 watts</td>
</tr>
<tr>
<td>Useful RF Power Output, 225 Mc.</td>
<td>4.6 watts</td>
</tr>
</tbody>
</table>

- Adjust for the required plate current.
- It is recommended that the push-pull RF grid signal be carefully balanced. The use of a separate dc grid resistance for each section from the rectified grid current, provides some compensation for unbalanced RF grid drive voltage.

### AVERAGE PLATE CHARACTERISTICS - 10% DUTY CYCLE

![Graph showing average plate characteristics with conditions: \( E_f = 6.3 \text{ Volts} \) and \( E_c = 150 \text{ Volts} \)]
AVERAGE PLATE CHARACTERISTICS - 10% DUTY CYCLE

Conditions:
E1 = 6.3 Volts
Ec2 = 150 Volts
lb = ————
Ic2 = ————

Plate and Screen Current - Ma.

Plate Voltage - Volts