MECHANICAL DATA
Bulb ............................................. T-6½
Base ............................................ E9-1, Small Button 9-Pin
Outline ........................................ 6-3
Basing ........................................... 9ER
Cathode ........................................ Coated Unipotential
Mounting Position ......................... Any

ELECTRICAL DATA
HEATER CHARACTERISTICS
Heater Voltage .................................. 6.3 Volts
Heater Current ................................... 600 Ma
Heater Warm-up Time¹ .......................... 11 Seconds
Heater-Cathode Voltage (Design Center Values)
  Heater Negative with Respect to Cathode
    Total DC and Peak ........................... 200 Volts Max.
  Heater Positive with Respect to Cathode
    DC ........................................... 100 Volts Max.
    Total DC and Peak ........................... 200 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)
  Triode
    Grid to Plate: (g to p) ..................... 2.6 μf
    Input: g to (h+tk) ......................... 2.8 μf
    Output: p to (h+tk) ....................... 0.38 μf
    No. 1 Diode Plate to Triode Grid ........ 0.070 μf Max.
    No. 2 Diode Plate to Triode Grid ........ 0.11 μf Max.
    No. 1 Diode Cathode to All:
      1dk to (h+tk+2dk+tp+1dp+tg+2dp) .... 4.8 μf
    No. 2 Diode Cathode to All:
      2dk to (h+tk+1dk+tp+1dp+2dp+tg) ... 4.8 μf
    No. 1 Diode Plate to No. 2 Diode Plate .. 0.060 μf Max.
    No. 1 Diode Plate to No. 1 Diode
      Cathode+Heater: 1dp to (1dk+h) .... 1.9 μf
      No. 2 Diode Plate to No. 2 Diode
        Cathode+Heater: 2dp to (2dk+h) ... 1.9 μf
    No. 1 Diode Cathode to No. 1 Diode
      Plate+Heater: 1dk to (1dp+h) .... 4.6 μf
    No. 2 Diode Cathode to No. 2 Diode
      Plate+Heater: 2dk to (2dp+h) .... 4.6 μf
    No. 1 Diode Plate to All:
      1dp to (h+tk+1dk+2dk+tp+2dp+tg) .. 3.0 μf
    No. 2 Diode Plate to All:
      2dp to (h+tk+1dk+2dk+tp+1dp+tg) .. 3.0 μf

RATINGS — Each Section (Design Center Values — Except as Noted)
  Triode
    Plate Voltage ............................... 300
    Positive DC Grid Voltage ................... 0
    Peak Positive Pulse Plate Voltage (Abs. Max.) ... 1200 Volts
    Maximum Plate Dissipation³ .................. 3.5 Watts Max.
    Peak Negative Pulse Grid Voltage .........
    Average Cathode Current ................... 20 Ma
    Peak Cathode Current ...................... 70 Ma
    Grid Circuit Resistance .................... 1.0 Megohms Max.
    Self Bias ................................... 2.2 Megohms Max.
  Diodes
    Peak Plate Current, Each Plate ........... 54 Ma Max.
    DC Current, Each Plate .................... 9 Ma Max.
CHARACTERISTICS AND TYPICAL OPERATION

Triode: Class A Amplifier

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>90</td>
<td>250 Volts</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>0</td>
<td>-9 Volts</td>
</tr>
<tr>
<td>Plate Resistance (approx.)</td>
<td>4700</td>
<td>7150 Ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>4700</td>
<td>2800 µmhos</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Plate Current</td>
<td>13.5</td>
<td>8.0 Ma</td>
</tr>
<tr>
<td>Plate Current at E &lt; -12.5 Volts DC</td>
<td></td>
<td>1.7 Ma</td>
</tr>
<tr>
<td>Grid Voltage (approx.) for I&lt;sub&gt;o&lt;/sub&gt; = 10 µa</td>
<td>-7</td>
<td>-18 Volts</td>
</tr>
</tbody>
</table>

Diodes

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Current Each Plate at 10 Volts DC</td>
<td></td>
<td>50 Ma</td>
</tr>
<tr>
<td>Voltage Drop Each Section at I&lt;sub&gt;o&lt;/sub&gt; = 9 Ma DC</td>
<td></td>
<td>2.6 Volts</td>
</tr>
</tbody>
</table>

NOTES:

1. **Heater Warm-up Time** is defined as the time required in the circuit shown below for the voltage across the heater terminals to increase from zero to the heater test voltage (V1). The conditions used in conjunction with the test circuit depend upon the rated heater voltage and current of the tube under test. For this type: E = 25 Volts, R = 31.5 Ohms, V<sub>1</sub> = 5.0 Volts

![Diagram](image)

E — Applied Voltage, RMS or DC
R — Total Series Resistance
V<sub>1</sub> — Heater Test Voltage, RMS or DC
(80% Rated Heater Voltage)

2. For operation in a 525 line, 30-frame system as described in "Standards of Good Engineering Practice for Television Stations; Federal Communications Commission". The duty cycle of the voltage pulse must not exceed 15% of one scanning cycle.

3. In stages operating with grid leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.
AVERAGE PLATE CHARACTERISTICS
AVERAGE TRANSFER CHARACTERISTICS

\[ E_f = \text{RATED VALUE} \]

-\( G_m \) (in \( \mu \)) vs. GRID VOLTAGE
- AMPLIFICATION FACTOR (\( \mu \))

\( E_b = 250 \text{ VOLTS} \)

\( E_b = 260 \text{ VOLTS} \)

\( G_m \) values indicated on curves.
AVERAGE TRANSFER CHARACTERISTICS

$E_f = $ RATED VALUE

GRID VOLTAGE

CURRENT IN MILLIAMPERES

PLATE RESISTANCE ($r_p$) IN KILOHMS

$E_b = 250$ VOLTS

$E_b = 500$ VOLTS