ADVANCE DATA

MECHANICAL DATA

Bulb
Base
Outline
Easing
Cathode
Mounting Position
T-9
E9-75, 9 Pin
See Drawing
9QT
Coated Unipotential
Any

ELECTRICAL DATA

HEATER CHARACTERISTICS AND RATINGS

Average Characteristics

Heater Operation
Series

Heater Voltage
16.8 Volts

Heater Current
450\(^{1}\) Ma

Heater Warm-up Time\(^{2}\)
11 Seconds

Ratings (Design Maximum Values)\(^{3}\)

Min.
Max.

Heater Current\(^{3}\)
420
480 Ma

Maximum Heater-Cathode Voltage

Heater Negative with Respect to Cathode
Total DC and Peak
200 Volts

Heater Positive with Respect to Cathode
DC
Total DC and Peak
100 Volts
200 Volts

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Triode Section

Grid to Plate
3.8 pf
Input: g to (h + Tk)
2.0 pf
Output: p to (h + Tk)
0.4 pf

Pentode Section

Grid No. 1 to Plate
0.26 pf Max.
Input: g1 to (h + Pk, g3)
13 pf
Output: p to (h + Pk, g3)
7 pf

from JEDEC release #4335, July 8, 1963
RATINGS (Design Maximum Values)\(^4\)

Vertical Deflection Oscillator and Amplifier\(^5\)

<table>
<thead>
<tr>
<th></th>
<th>Tri. Osc.</th>
<th>Pent. Amp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250</td>
<td>250 Volts Max.</td>
</tr>
<tr>
<td>Grid No. 2 Voltage</td>
<td>-</td>
<td>200 Volts Max.</td>
</tr>
<tr>
<td>Peak Positive Pulse Plate Voltage</td>
<td>-</td>
<td>2,000 Volts Max.</td>
</tr>
<tr>
<td>Peak Negative Grid No. 1 Voltage</td>
<td>400</td>
<td>150 Volts Max.</td>
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<tr>
<td>Plate Dissipation(^6)</td>
<td>1.0</td>
<td>7 Watts Max.</td>
</tr>
<tr>
<td>Grid No. 2 Dissipation(^6)</td>
<td>-</td>
<td>1.8 Watts Max.</td>
</tr>
<tr>
<td>Average Cathode Current</td>
<td>20</td>
<td>70 Ma Max.</td>
</tr>
<tr>
<td>Peak Cathode Current</td>
<td>70</td>
<td>245 Ma Max.</td>
</tr>
<tr>
<td>Grid Circuit Resistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Bias</td>
<td>2.2</td>
<td>2.2 Megohms Max.</td>
</tr>
<tr>
<td>Fixed Bias</td>
<td>1.0</td>
<td>1.0 Megohm Max.</td>
</tr>
</tbody>
</table>

AVERAGE CHARACTERISTICS

<table>
<thead>
<tr>
<th></th>
<th>Triode Section</th>
<th>Pentode Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>150</td>
<td>120 Volts</td>
</tr>
<tr>
<td>Grid No. 2 Voltage</td>
<td>-</td>
<td>110 Volts</td>
</tr>
<tr>
<td>Grid No. 1 Voltage</td>
<td>-5</td>
<td>-8 Volts</td>
</tr>
<tr>
<td>Plate Current</td>
<td>3.3</td>
<td>46 Ma</td>
</tr>
<tr>
<td>Grid No. 2 Current</td>
<td>-</td>
<td>4 Ma</td>
</tr>
<tr>
<td>Transconductance</td>
<td>1,900</td>
<td>7,100 (\mu)ohms</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>21.5</td>
<td>-</td>
</tr>
<tr>
<td>Plate Resistance (approx.)</td>
<td>11,300</td>
<td>11,700 Ohms</td>
</tr>
<tr>
<td>Ec for Ib = 10 (\mu)a (approx.)</td>
<td>-10</td>
<td>- Volts</td>
</tr>
<tr>
<td>Ec for Ib = 100 (\mu)a (approx.)</td>
<td>-</td>
<td>-25 Volts</td>
</tr>
</tbody>
</table>

NOTES:

1. For series operation of heaters, equipment should be designed so that at normal supply voltage bogey tubes will operate at this value of heater current.

2. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80\% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.

3. Heater voltage supply variations shall be restricted to maintain heater current within the specified tolerance.
4. 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.

5. 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.

6. In stages operating with grid leak bias, an adequate bias resistor or other suitable means is required to protect the tube in the absence of excitation.