Medium-Mu Triode—Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE
With Heater Having Controlled Warm-Up Time

GENERAL DATA

Electrical:
Heater, for Unipotential Cathodes:
Voltage (AC or DC) .................. 6.3 volts
Current .................. 0.6 ± 6% amp
Warm-up time (Average) .................. 11 sec
Direct Interelectrode Capacitances:

<table>
<thead>
<tr>
<th>Triode Unit</th>
<th>Pentode Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate</td>
<td>2.2 μμf</td>
</tr>
<tr>
<td>Grid to cathode and heater</td>
<td>2.6 μμf</td>
</tr>
<tr>
<td>Plate to cathode and heater</td>
<td>0.34 μμf</td>
</tr>
</tbody>
</table>

Grid No.1 to plate: .......................... 0.06 μμf
Grid No.1 to cathode & internal shield & grid No.3, grid No.2, and heater: .......................... 7.5 μμf
Plate to cathode & internal shield & grid No.3, grid No.2, and heater: .......................... 3.4 μμf
Triode grid to pentode plate: .......................... 0.022 max. μμf
Pentode grid No.1 to triode plate: .......................... 0.006 max. μμf
Pentode plate to triode plate: .......................... 0.12 max. μμf

Characteristics, Class A Amplifier:

<table>
<thead>
<tr>
<th>Triode Unit</th>
<th>Pentode Unit</th>
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</thead>
<tbody>
<tr>
<td>Plate Supply Voltage</td>
<td>150 40 200 volts</td>
</tr>
<tr>
<td>Grid-No.2 Supply Voltage</td>
<td>– 125 125 volts</td>
</tr>
<tr>
<td>Cathode Resistor</td>
<td>150 – 82 ohms</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>43 – –</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>8100 – 100000 ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>5300 – 8000 μμhos</td>
</tr>
<tr>
<td>Plate Current</td>
<td>9.5 28b 17 ma</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>– 10b 3.4 ma</td>
</tr>
<tr>
<td>Grid-No.1 Voltage (Approx.)</td>
<td>for plate μa = 100. – –</td>
</tr>
<tr>
<td>–6.5 – – –7.5 volts</td>
<td></td>
</tr>
</tbody>
</table>

Mechanical:
Operating Position: Any
Maximum Overall Length: 2–5/8"
Maximum Seated Length: 2–3/8"
Length, Base Seat to Bulb Top (Excluding tip): 2" ± 3/32"
Diameter: 0.750" to 0.875"
Dimensional Outline: See General Section
Bulb: Small-Button Naval 9-Pin (JEDEC No.E9–1)
Basing Designation for BOTTOM VIEW.........9DX

Pin 1-Triode  
Cathode  
Pin 2-Triode  
Grid  
Pin 3-Triode  
Plate  
Pin 4-Heater  
Pin 5-Heater

Pin 6-Pentode  
Cathode,  
Grid No.3,  
Internal Shield  
Pin 7-Pentode  
Grid No.1  
Pin 8-Pentode  
Grid No.2  
Pin 9-Pentode  
Plate

AMPLIFIER — Class A

Maximum Ratings, Design-Maximum Values:

<table>
<thead>
<tr>
<th></th>
<th>Triode</th>
<th>Pentode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>330 max.</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>-</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>-</td>
<td>See Grid-No.2 Input</td>
</tr>
</tbody>
</table>

Rating Chart at front of Receiving Tube Section

GRID-No.1 (CONTROL-GRID) Voltage:
Positive-bias value . 0 max. 0 max. volts

GRID-No.2 INPUT:
For grid-No.2 voltages up to 165 volts . - 1 max. watt
For grid-No.2 voltages between 165 and 330 volts . - See Grid-No.2 Input

Rating Chart at front of Receiving Tube Section

Plate Dissipation . 2.8 max. 3.3 max. watts

Peak Heater-Cathode Voltage:
Heater negative with respect to cathode . 200 max. 200 max. volts
Heater positive with respect to cathode . 200⁰ max. 200⁰ max. volts

Maximum Circuit Values:

<table>
<thead>
<tr>
<th></th>
<th>Triode</th>
<th>Pentode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid-No.1-Circuit Resistance</td>
<td>-</td>
<td>0.25 max. megohm</td>
</tr>
<tr>
<td>For fixed-bias operation . .</td>
<td>0.5 max.</td>
<td>0.25 max. megohm</td>
</tr>
<tr>
<td>For cathode-bias operation . .</td>
<td>1 max.</td>
<td>1 max. megohm</td>
</tr>
</tbody>
</table>

Operating Considerations

Because the internal shield is connected to the cathode and grid No.3, the impedance in the cathode circuit should be kept as low as possible to minimize cross-coupling effects.

* Without external shield.

b This value can be measured by a method involving a recurrent wave form such that the maximum ratings of the tube will not be exceeded.

c The dc component must not exceed 100 volts.
AVERAGE CHARACTERISTICS
Triode Unit

E_t = 6.3 VOLTS

PLATE MILLIAMPERES

PLATE RESISTANCE (r_p) — OHMS

AMPLIFICATION FACTOR (A_t)

TRANSCONDUCTANCE (g_m) — MICROMHOS

RADIO CORPORATION OF AMERICA
Electron Tube Division
Harrison, N. J.
AVERAGE CHARACTERISTICS
Pentode Unit

$E_g = 6.3$ VOLTS
GRID-No.2 VOLTS = 125

PLATE ($I_D$) OR GRID-No.2 ($I_{C2}$) MILLIAMPERES

RADIO CORPORATION OF AMERICA
Electron Tube Division
Harrison, N. J.

DATA 3
1-62
AVERAGE CHARACTERISTICS
Pentode Unit

Eₚ=6.3 VOLTS
PLATE VOLTS=200
GRID-No.2 VOLTS=125

TRANSCONDUCTANCE (gm) — MICROMOHMS

PLATE (Iₚ) OR GRID-No.2 (Iₑ₂) MILLIAMPERES

GRID-No.1 VOLTS

0 10 20 30 40
-7 -6 -5 -4 -3 -2 -1 0