Medium-Mu Triode—Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE
For High-Fidelity Audio-Amplifier Applications Critical as to Noise and Hum

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:
- Voltage (AC or DC).............................. 6.3 ± 0.6 volts
- Current at heater volts = 6.3.................. 0.450 amp
- Peak heater-cathode voltage (Each Unit):
  - Heater negative with respect to cathode........ 200 max. volts
  - Heater positive with respect to cathode........ 200 max. volts

Direct Interelectrode Capacitances:

Triode Unit:
- Grid to plate.................................. 2 pf
- Grid to cathode and heater.................... 2.3 pf
- Plate to cathode and heater................... 0.3 pf

Pentode Unit:
- Grid No.1 to plate.............................. 0.06 max. pf
- Grid No.1 to cathode & internal shield & grid No.3, grid No.2, and heater...................... 5 pf
- Plate to cathode & internal shield & grid No.3, grid No.2, and heater...................... 2 pf

Equivalent Hum and Noise Voltage (Referenced to Grid):

Triode Unit
- Average Value (RMS)............................ 10 microvolts
- Maximum Value (RMS)............................ 50 microvolts

Measured in "true rms" units under the following conditions:
- heater volts = 6.3 ac, center-tap of heater transformer connected to ground,
- plate-supply volts = 250,
- plate load resistor (megohms) = 0.1,
- cathode resistor (ohms) unbypassed = 1500,
- grid resistor (megohms) = 0.05, and amplifier covering frequency range between 25 and 10,000 cps.

Pentode Unit
- Average Value (RMS)............................ 15 microvolts
- Maximum Value (RMS)............................ 35 microvolts

Measured in "true rms" units under the following conditions:
- heater volts = 6.3 ac, center-tap of heater transformer connected to ground,
- plate-supply volts = 250,
- plate-load resistor (megohms) = 0.22,
- grid-No.2 supply volts = 250;
- grid No.2 voltage divider: resistor (megohm) from grid No.2 to B+ = 0.68,
- resistor (megohm) from grid-No.2 to ground = 0.33; bypass ca-

→ Indicates a change.
pactor (μf) from grid No.2 to cathode = 0.1; cathode resis-
tor (ohms unbypassed) = 680; grid No.1 resistor (megohm) = 0.27;
and amplifier covering frequency range between 25 and 10,000
cps.

Characteristics, Class Aj Amplifier:

<table>
<thead>
<tr>
<th></th>
<th>Triode</th>
<th>Pentode</th>
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</thead>
<tbody>
<tr>
<td>Plate-Supply Voltage</td>
<td>215</td>
<td>100</td>
</tr>
<tr>
<td>Grid-No.2 Supply Voltage</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Grid-No.1 Voltage</td>
<td>-8.5</td>
<td>-</td>
</tr>
<tr>
<td>Cathode Resistor</td>
<td>-</td>
<td>1000</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>17</td>
<td>-</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>0.0081</td>
<td>1</td>
</tr>
<tr>
<td>Transconductance</td>
<td>2100</td>
<td>1500</td>
</tr>
<tr>
<td>Plate Current</td>
<td>9</td>
<td>1.1</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>-</td>
<td>0.35</td>
</tr>
<tr>
<td>Grid-No.1 Voltage (Approx.) for plate μa = 10</td>
<td>-40</td>
<td>-4</td>
</tr>
</tbody>
</table>

Mechanical:

Operating Position ...................................... Any
Type of Cathodes ....................................... Coated Unipotential
Maximum Overall Length ................................ 2-3/16"
Maximum Seated Length .................................. 1-15/16"
Length, Base Seat to Bulb Top (Excluding tip) ... 1-9/16" ± 3/32"
Diameter .................................................. 0.750" to 0.875"
Dimensional Outline ..................................... See General Section
Bulb ...................................................... 16-1/2
Base ...................................................... Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW ............... 9JT

AMPLIFIER — Class Aj

Maximum Ratings, Design-Maximum Values:

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<tr>
<td>Plate Voltage</td>
<td>330 max.</td>
<td>330 max.</td>
</tr>
<tr>
<td>Grid-No.2 (SCREEN-GRID) SUPPLY VOLTAGE</td>
<td>-</td>
<td>330 max.</td>
</tr>
<tr>
<td>Grid-No.2 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

RADIO CORPORATION OF AMERICA
Electron Tube Division
Harrison, N. J.
GRID-No.2 INPUT:
   For grid-No.2 voltages
     up to 165 volts ....  -  0.6 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 ....  2.4 max.  3 max.  watts

Maximum Circuit Values:

Grid-No.1-Circuit
   Resistance: c
     For fixed-bias
       operation ........ 0.5 max.  0.25 max.  megohm
     For cathode-bias
       operation ........  1 max.  1 max.  megohm

a The dc component must not exceed 100 volts.
b Without external shield.
c If either unit is operated at maximum rated conditions, grid-No.1-cir-
cuit resistances for both units should not exceed the stated values.