Medium-Mu Triode—
Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE
For Multivibrator-Type Horizontal-Deflection Oscillator, AGC Amplifier, and Sync-Seperator Applications

GENERAL DATA

Electrical:
Heater Characteristics and Ratings:

- Voltage (AC or DC) . . . . . . . . . . . . 6.3^a 6.3 ± 0.6 volts
- Current . . . . . . . . . . . . . . . . . . 0.450 ± 0.030 0.450^b amp
- Warm-up time (Average) . . . . . . . . 11 — sec
- Peak heater-cathode voltage (Each unit):
  - Heater negative with respect to cathode. . . . . . . . . . . 200 max. volts
  - Heater positive with respect to cathode. . . . . . . . . . . 200^c max. volts

Direct Interelectrode Capacitances:

<table>
<thead>
<tr>
<th></th>
<th>Without External Shield</th>
<th>With External Shield</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Triode Unit:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid to plate . . . .</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Grid to cathode, pentode grid No.3 &amp; pentode cathode &amp; internal shield, and heater.</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Plate to cathode, pentode grid No.3 &amp; pentode cathode &amp; internal shield, and heater.</td>
<td>1.4</td>
<td>1.9</td>
</tr>
<tr>
<td>Heater to cathode . .</td>
<td>3.0</td>
<td>3.0^e</td>
</tr>
<tr>
<td><strong>Pentode Unit:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid No.1 to plate. .</td>
<td>0.02 max.</td>
<td>0.01 max.</td>
</tr>
<tr>
<td>Grid No.1 to cathode &amp; grid No.3 &amp; internal shield, grid No.2, and heater .</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Plate to cathode &amp; grid No.3 &amp; internal shield, grid No.2, and heater.</td>
<td>2.6</td>
<td>3.4</td>
</tr>
<tr>
<td>Heater to cathode &amp; grid No.3 &amp; internal shield . . . . . .</td>
<td>3.0</td>
<td>3.0^e</td>
</tr>
</tbody>
</table>

Characteristics, Class A\_1 Amplifier:

<table>
<thead>
<tr>
<th></th>
<th><strong>Triode Unit</strong></th>
<th><strong>Pentode Unit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage . . . .</td>
<td>125 volts</td>
<td>125 volts</td>
</tr>
<tr>
<td>Grid-No.2 Voltage . . .</td>
<td>—</td>
<td>125 volts</td>
</tr>
<tr>
<td>Grid-No.1 Voltage . . .</td>
<td>—1</td>
<td>—1 volt</td>
</tr>
<tr>
<td>Amplification Factor. . .</td>
<td>46</td>
<td>—</td>
</tr>
<tr>
<td>Plate Resistance (Approx.) . .</td>
<td>5400 ohms</td>
<td>200000 ohms</td>
</tr>
<tr>
<td>Transconductance. . . . . . .</td>
<td>8500 (\mu)hos</td>
<td>7500 (\mu)hos</td>
</tr>
</tbody>
</table>
Plate Current .......... 13.5 ma
Grid-No.2 Current ...... 4 ma
Grid-No.1 Voltage (Approx.)
for plate μa = 10 .......... -8 volts

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. ...................... T6-1/2
Base. ...................... Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW. .......... 9AE

Pin 1 - Triode Plate
Pin 2 - Pentode
Pin 3 - Pentode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Pentode Plate
Pin 7 - Pentode Cathode, Pentode
Pin 8 - Triode Cathode
Pin 9 - Triode Grid

HORIZONTAL-DEFLECTION OSCILLATOR
For operation in a 525-line, 30-frame system

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>350 max. volts</td>
</tr>
<tr>
<td>GRID-No.2 (SCREEN-GRID) VOLTAGE</td>
<td>-</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>GRID-No.1 (CONTROL-GRID) VOLTAGE:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive-bias value</td>
<td>0 max.</td>
<td>0 max. volts</td>
</tr>
<tr>
<td>Peak-negative value</td>
<td>-</td>
<td>175 max. volts</td>
</tr>
<tr>
<td>PLATE DISSIPATION</td>
<td>2.5 max.</td>
<td>2.5 max. watts</td>
</tr>
<tr>
<td>GRID-No.2 INPUT</td>
<td>-</td>
<td>0.55 max. watts</td>
</tr>
<tr>
<td>CATHODE CURRENT:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>-</td>
<td>300 max. ma</td>
</tr>
<tr>
<td>Average</td>
<td>-</td>
<td>20 max. ma</td>
</tr>
</tbody>
</table>

Maximum Circuit Values (Each Unit):

Grid-No.1-Circuit Resistance:
For fixed-bias or cathode-bias operation .......... 2.2 max. megohms

a At heater amperes = 0.450.
b At heater volts = 6.3.
c The dc component must not exceed 100 volts.
d With external shield JEDEC No.315 connected to cathode of unit under test except as noted.
e With external shield JEDEC No.315 connected to ground.
f As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.
INTERELECTRODE LEAKAGE

Leakage Resistance between Plate of Each Unit and All Other Electrodes of both units tied together . . . . . . . . . . 100 min. megohms

This test is performed under the following conditions: heater volts = 6.3; and plate 300 volts negative with respect to all other electrodes tied together.

Leakage Resistance between Grid No. 1 of Each Unit and All Other Electrodes of both units tied together . . . . . . 100 min. megohms

This test is performed under the following conditions: heater volts = 6.3; and grid 100 volts negative with respect to all other electrodes tied together.
AVEAGE PLATE CHARACTERISTICS
Triode Unit

E_F = 6.3 VOLTS

PLATE VOLTS

PLATE MILLIAMPERES

GRID VOLTS: EC = 0

92CM-1042IRI

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

E_c = 6.3 VOLTS
GRID-N2 VOLTS = 125

PLATE (I_b) OR GRID-N2 (I_c2) MILLIAMPERES
92CM-10436
AVERAGE CHARACTERISTICS
Pentode Unit

E_f = 6.3 VOLTS
PLATE VOLTS = 125
GRID-N°2 VOLTS = 125

GRID-N°1 VOLTS

PLATE (I_P) OR GRID-N°2 (I_C2) MILLIAMPERES

TRANSCONDUCTANCE (g_m) MICROHMS

92CM-10417

RADIO CORPORATION OF AMERICA
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Harrison, N. J.
DATA 4
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