Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE
For Audio-Amplifier Applications Critical as to Microphonism, Leakage Noise, and Hum

GENERAL DATA

Electrical:
Heater, for Unipotential Cathode:
Voltage (AC or DC) .................. 6.3 ± 10% volts
Current at 6.3 volts .................. 0.15 amp

Direct Interelectrode Capacitances:

Pentode Connection:
Grid No.1 to plate .................. 0.11 max. μμf
Grid No.1 to cathode, grid No.3,
grid No.2, heater, and pins 2 and 6. 2.7 μμf
Plate to cathode, grid No.3,
grid No.2, heater, and pins 2 and 6. 2.4 μμf

Triode Connection:
Grid No.1 to plate .................. 1.4 μμf
Grid No.1 to cathode .................. 1.4 μμf
Plate to cathode .................. 0.85 μμf

Characteristics, Class A Amplifier:

<table>
<thead>
<tr>
<th>Triode Connection</th>
<th>Pentode Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>100 250</td>
</tr>
<tr>
<td>Grid No.3</td>
<td>200</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>-3</td>
</tr>
<tr>
<td>Grid-No.1 Voltage</td>
<td>-8</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>21</td>
</tr>
<tr>
<td>Plate Resistance</td>
<td>0.017 0.0137</td>
</tr>
<tr>
<td>Transconductance</td>
<td>1240 1530</td>
</tr>
<tr>
<td>Plate Current</td>
<td>2.2 5.5</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>-</td>
</tr>
<tr>
<td>Grid-No.1 Voltage</td>
<td>0</td>
</tr>
</tbody>
</table>

(Aprox.) for plate:
μa = 10

Mechanical:
Operating Position .................. Any
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)

<--Indicates a change.
Basing Designation for BOTTOM VIEW: 9AD

Pin 1 - Grid No.1
Pin 2 - No Connection
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater

Pin 6 - No Connection
Pin 7 - Grid No.2
Pin 8 - Plate
Pin 9 - Grid No.3

AMPLIFIER — Class A

Maximum Ratings, Design-Maximum Values:

<table>
<thead>
<tr>
<th>Triode Connection</th>
<th>Pentode Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE VOLTAGE</td>
<td>275 max.</td>
</tr>
<tr>
<td>GRID No.3 (SUPPRESSOR GRID)</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>Connect to cathode at socket</td>
<td></td>
</tr>
<tr>
<td>GRID-No.2 (SCREEN-GRID)</td>
<td></td>
</tr>
<tr>
<td>SUPPLY VOLTAGE</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>GRID-No.2 VOLTAGE</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:

| Negative-bias value | 55 max. | 55 max. volts |
| Positive-bias value | 0 max.  | 0 max. volts  |

GRID-No.2 INPUT:

For grid-No.2 voltages up to 165 volts...

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:

1.7 max. 1.25 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode...

Heater positive with respect to cathode...

See RESISTANCE-COUPLED-AMPLIFIER CHARTS No. 26 & No. 27 at front of this Section

Maximum Circuit Values:

<table>
<thead>
<tr>
<th>Triode Connection</th>
<th>Pentode Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid-No.1-Circuit Resistance</td>
<td>2.2 max. 2.2 max. megarohms</td>
</tr>
</tbody>
</table>

* Without external shield.

b Grid No.3 and grid No.2 connected to plate.

→ Indicates a change.
OPERATING CONSIDERATIONS

It is recommended that pins 2 and 6 be grounded in all applications. Grounding of these pins will effectively shield grid No.1 and plate from heater and help to reduce hum level when an ac heater supply is used.
AVERAGE CHARACTERISTICS
Pentode Connection

$E_F = 6.3$ VOLTS
GRID No. 3 CONNECTED TO CATHODE AT SOCKET.
GRID-No.2 VOLTS=100

PLATE (I_b) OR GRID-No.2 (I_C2) MILLIAMPERES

92CM - 7439RI

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