High-Mu Triode—Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE
For Sound-IF, Keyed-AGC, Sync-Separator, Sync-Amplifier, Noise-Suppression Circuits, and Video Amplifier Service

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:
- Voltage (AC or DC) . . . . 6.3\(^a\) 6.3 ±0.6 volts
- Current . . . . . . . . . 0.600 ± 0.040 0.600\(^b\) 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>Triode Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate . . . . . . . . .</td>
<td>2.2 pf</td>
</tr>
<tr>
<td>Grid to cathode and heater . . .</td>
<td>3.0 pf</td>
</tr>
<tr>
<td>Plate to cathode and heater . . .</td>
<td>2.0 pf</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pentode Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid No.1 to plate . . . . . .</td>
<td>0.08 max. pf</td>
</tr>
<tr>
<td>Grid No.1 to cathode &amp; grid No.3 &amp; internal shield, grid No.2 and heater . . .</td>
<td>8.0 pf</td>
</tr>
<tr>
<td>Pentode plate to pentode cathode &amp; grid No.3 &amp; internal shield, grid No.2 and heater . . .</td>
<td>3.2 pf</td>
</tr>
<tr>
<td>Pentode grid No.1 to triode plate . . . . . . .</td>
<td>0.012 max. pf</td>
</tr>
<tr>
<td>Pentode plate to triode plate . . . . . . .</td>
<td>0.24 max. pf</td>
</tr>
</tbody>
</table>

Characteristics, Class A\(_1\) Amplifier:

<table>
<thead>
<tr>
<th>Triode Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage . . . . . . . . .</td>
<td>200 volts</td>
</tr>
<tr>
<td>Grid-No.1 Voltage . . . . . . .</td>
<td>-2 volts</td>
</tr>
<tr>
<td>Amplification Factor . . . . . .</td>
<td>70</td>
</tr>
<tr>
<td>Plate Resistance (Approx.) . . .</td>
<td>17500 ohms</td>
</tr>
<tr>
<td>Transconductance . . . . . . .</td>
<td>4000 (\mu)mhos</td>
</tr>
<tr>
<td>Plate Current . . . . . . . . .</td>
<td>4 ma</td>
</tr>
</tbody>
</table>
Triode Unit

Grid-No.1 Voltage (Approx.)
for plate μa = 20 ........ -5 volts

Pentode Unit

Plate Voltage .......... 40  60  125  200 volts
Grid-No.2 Voltage ...... 125  200  125  200 volts
Grid-No.1 Voltage ...... 0  0 -1 -2.9 volts
Plate Resistance (Approx.) - - 100000 150000 ohms
Transconductance ....... - - 11500 10700 μmhos
Plate Current .......... 28  51  22  22 ma
Grid-No.2 Current ..... 9  14  4  4 ma
Grid-No.1 Voltage (Approx.)
for plate μa = 20 .......... - - -5.5 -9 volts

Mechanical:

Operating Position .................. Any
Type of Cathodes .................. Coated Unipotential
Maximum Overall Length ............ 2-5/8"
Maximum Seated Length ............. 2-3/8"
Length from Base Seat to Bulb Top (Excluding tip) . 2" ± 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 .......... 9DX

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

AMPLIFIER — Class A1

Maximum Ratings, Design-MAXIMUM Values:

<table>
<thead>
<tr>
<th></th>
<th>Triode Unit</th>
<th>Pentode Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE VOLTAGE .........</td>
<td>330 max.</td>
<td>330 max.</td>
</tr>
<tr>
<td>GRID-No.2 (SCREEN-GRID) VOLTAGE ..........</td>
<td>-</td>
<td>330 max.</td>
</tr>
<tr>
<td>GRID-No.1 (CONTROL-GRID) VOLTAGE:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative-bias value</td>
<td>50 max.</td>
<td>50 max.</td>
</tr>
<tr>
<td>Positive-bias value</td>
<td>0 max.</td>
<td>0 max.</td>
</tr>
<tr>
<td>PLATE DISSIPATION ......</td>
<td>1.1 max.</td>
<td>4 max.</td>
</tr>
<tr>
<td>GRID-No.2 INPUT ........</td>
<td>-</td>
<td>1.7 max.</td>
</tr>
</tbody>
</table>

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Electron Tube Division
Harrison, N. J.
Maximum Circuit Values:

Grid-No.1 Circuit Resistance:

For fixed-bias operation... 0.5 max. 0.25 max. megohm
For cathode-bias
operation ........... 1 max. 1 max. megohm

\[a\] At heater amperes = 0.600.
\[b\] At heater volts = 6.3.
\[c\] The dc component must not exceed 100 volts.
\[d\] Without external shield.
\[e\] This value can be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.
AVERAGE PLATE CHARACTERISTICS
Triode Unit

$E_t = 6.3$ VOLTS

PLATE MILLIAMPERES

PLATE VOLTS

92CM-11960
AVERAGE CHARACTERISTICS
Pentode Unit

$E_1 = 6.3$ VOLTS
GRID-No.2 VOLTS $+200$

PLATE (I_d) OR GRID-No.2 (I_{c2}) MILLIAMPERES

GRID-{d} Volts Eq. 0

PLATE VOLTS

92CM-11961

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DATA 3
6-63
AVERAGE CHARACTERISTICS
Pentode Unit

Eₚ = 6.3 VOLTS
GRID — No.2 VOLTS = 125

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

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