Medium-Mu Triode—Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE
For Oscillator-Mixer Service in VHF TV-Tuner Applications

Electrical:

Heater Characteristics and Ratings:
Voltage (AC or DC) ........ 6.3\* 6.3 ± 0.6 volts
Current ................. 0.450 ± 0.030 0.450\* 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\* max. volts
Direct interelectrode Capacitances:
   Triode Unit:
      G\text{t} to P\text{t} .............. 1.6 pf
      Input: G\text{t} to (K\text{t}, G\text{3p} + K\text{p} + IS, H) .... 3.2 pf
      Output: P\text{t} to (K\text{t}, G\text{3p} + K\text{p} + IS, H) .... 1.8 pf
   Pentode Unit:
      G\text{1p} to P\text{p} .............. 0.01 max. pf
      Input: G\text{1p} to (K\text{p} + G\text{3p} + IS, G\text{2p}, H) .... 5.5 pf
      Output: P\text{p} to (K\text{p} + G\text{3p} + IS, G\text{2p}, H) .... 3.4 pf
      Heater to cathode (Each Unit) .... 3.2 pf

Characteristics, Class A\text{1} Amplifier:

<table>
<thead>
<tr>
<th></th>
<th>Triode</th>
<th>Pentode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>Grid-No. 2 Voltage</td>
<td>-</td>
<td>125</td>
</tr>
<tr>
<td>Grid-No. 1 Voltage</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>46</td>
<td>-</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>5400</td>
<td>200000</td>
</tr>
<tr>
<td>Transconductance</td>
<td>8500</td>
<td>7500</td>
</tr>
<tr>
<td>Plate Current</td>
<td>13.5</td>
<td>12</td>
</tr>
<tr>
<td>Grid-No. 2 Current</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Grid-No. 1 Voltage (Approx.)</td>
<td>-8</td>
<td>-8</td>
</tr>
</tbody>
</table>

for plate \(\mu a = 10\)

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. .......... 9FZ

Pin 1 - Triode Plate
Pin 2 - Pentode Grid No. 1
Pin 3 - Pentode Cathode, Gp15
Pin 4 - Heater
Pin 5 - Heater Plate
Pin 6 - Pentode Grid No. 2
Pin 7 - Pentode Pin 8 - Triode Cathode
Pin 9 - Triode Grid Internal Shield

AMPLIFIER — Class A

Maximum Ratings, Design—Maximum Values:

<table>
<thead>
<tr>
<th>Triode</th>
<th>Pentode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>330 max.</td>
</tr>
<tr>
<td>Unit</td>
<td>volts</td>
</tr>
<tr>
<td>Grid-No.2 (Screen-Grid) Supply Voltage</td>
<td>-</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</td>
</tr>
<tr>
<td>Grid-No.1 (Control-Grid) Voltage: Positive-bias value</td>
<td>0 max.</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>2.5 max.</td>
</tr>
<tr>
<td>watts</td>
<td></td>
</tr>
<tr>
<td>Grid-No.2 Input: For grid-No.2 voltages up to 165 volts</td>
<td>-</td>
</tr>
<tr>
<td>watt</td>
<td></td>
</tr>
<tr>
<td>For grid-No.2 voltages between 165 and 330 volts</td>
<td>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</td>
</tr>
</tbody>
</table>

Maximum Circuit Values:

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

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.
AVERAGE CHARACTERISTICS
Pentode Unit

E_F=6.3 VOLTS
GRID-N°2 VOLTS=125

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

92CM-104.36
AVERAGE CHARACTERISTICS
Pentode Unit

$E_F = 6.3\ \text{VOLTS}$
$\text{PLATE VOLTS} = 125$
$\text{GRID-N\#2 VOLTS} = 125$

PLATE (I_b) OR GRID-N\# 2 (I_c 2 ) MILLIAMPERES

GRID-N\#1 VOLTS

TRANSCONDUCTANCE (g_m) MICROHOMS