High-Mu Triode—Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE
For Color-Killer, Sound IF Amplifier, and Band-pass-Amplifier Applications in TV Receivers

Electrical:
Heater Characteristics and Ratings:
Voltage (AC or DC) ........................................... 6.3 ± 0.6 volts
Current at heater volts = 6.3 ................................ 0.600 amp
Peak heater-cathode voltage:

\[
\begin{array}{ccc}
\text{Unit:} & \text{Triode} & \text{Pentode} \\
\text{Heater negative with} & 200 & 20 \times 20 \text{ max. volts} \\
\text{respect to cathode.} & \text{max.} & \text{max.} \\
\text{Heater positive with} & 200^b \text{ max.} & \text{max. volts} \\
\text{respect to cathode.} & \text{max.} & \text{max.} \\
\text{Direct Interelectrode Capacitances:} & & \\
\text{Without} & \text{With} \\
\text{External} & \text{External} \\
\text{Shield} & \text{Shield} \\
\text{Triode Unit:} & & \\
G_T \text{ to } P_T & 3.0 & 3.0 \text{ pf} \\
\text{Input: } G_T \text{ to } (H+G3p+I5, K_T) & 3.2 & 3.2 \text{ pf} \\
\text{Output: } P_T \text{ to } (H+G3p+I5, K_T) & 1.6 & 2.4 \text{ pf} \\
\text{Pentode Unit:} & & \\
G_{LP} \text{ to } P_P & 0.046 \text{ max.} & 0.030 \text{ max.} \text{ pf} \\
\text{Input: } G_{LP} \text{ to } (H+G3p+I5,G2p,K_p) & 7.5 & 7.5 \text{ pf} \\
\text{Output: } P_P \text{ to } (H+G3p+I5,G2p,K_p) & 2.2 & 2.8 \text{ pf} \\
G_T \text{ to } P_P & 0.018 \text{ max.} & 0.003 \text{ max.} \text{ pf} \\
G_{LP} \text{ to } P_T & 0.006 \text{ max.} & 0.002 \text{ max.} \text{ pf}
\end{array}
\]

Characteristics, Class A1 Amplifier:

\[
\begin{array}{ccc}
\text{Unit:} & \text{Triode} & \text{Pentode} \\
\text{Plate Voltage} & 250 & 125 \text{ volts} \\
\text{Grid-No.2 Voltage} & - & 125 \text{ volts} \\
\text{Grid-No.1 Voltage} & -2 & -1 \text{ volts} \\
\text{Amplification Factor} & 100 & - \\
\text{Plate Resistance (Approx.)} & 31500 & 150000 \text{ ohms} \\
\text{Transconductance} & 3200 & 10000 \mu \text{hms} \\
\text{Plate Current} & 1.8 & 12 \text{ ma} \\
\text{Grid-No.2 Current} & - & 4.5 \text{ ma} \\
\text{Grid-No.1 Voltage (Approx.)} & \text{for plate } \mu \text{a } = 20 & -3.5 & -7 \text{ volts}
\end{array}
\]

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 9QP
Pin 1 - Triode Cathode
Pin 2 - Triode Grid
Pin 3 - Triode Plate
Pin 4 - Heater
Pin 5 - See Footnote a (Heater, Pentode Grid No.3, Internal Shield)
Pin 6 - Pentode Cathode
Pin 7 - Pentode Grid No.1
Pin 8 - Pentode Grid No.2
Pin 9 - Pentode Plate

AMPLIFIER — Class A1

Maximum Ratings, Design-Maximum Values:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Triode</th>
<th>Pentode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>330 max.</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>Grid-No.2 Supply Voltage</td>
<td>–</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>–</td>
<td>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</td>
</tr>
<tr>
<td>Grid-No.1 Voltage: Positive-bias value</td>
<td>0 max.</td>
<td>0 max. volts</td>
</tr>
<tr>
<td>Grid-No.2 Input: For grid-No.2 voltages up to 165 volts</td>
<td>–</td>
<td>0.55 max. watt</td>
</tr>
<tr>
<td>For grid-No.2 voltages between 165 and 330 volts</td>
<td>–</td>
<td>See Grid-No.2 Input Rating Chart at front of Receiving Tube Section</td>
</tr>
</tbody>
</table>

Plate Dissipation 1 max. 2.5 max. watts

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 Pin No.5 (Pentode Grid No.3, Internal Shield, and Heater) should be operated at or near ground potential. If the peak cathode-to-grid No.3 voltage exceeds +20 volts, undesirable changes in the tube characteristics may result.
b The dc component must not exceed 100 volts.
c With external shield JEDEC No.315 connected to pins 4 and 5.