High-Mu Triode—Sharp-Cutoff Pentode

Pentode Unit Has Two Independent Control Grids

9-PIN MINIATURE TYPE
With Heater Having Controlled Warm-Up Time

GENERAL DATA

**Electrical:**

Heater Characteristics and Ratings (*Design-Maximum Values):*

- **Voltage (AC or DC):** 6.3a 6.3 ± 0.6 volts
- **Current:** 0.600 ± 0.040 0.600b amp
- **Warm-up time (Average):** 11 sec
- **Peak heater-cathode voltage:**
  - Heater negative with respect to cathode: 200 max. volts
  - Heater positive with respect to cathode: 200c max. volts

**Direct Interelectrode Capacitances:**

- **Triode Unit:**
  - Grid to plate: 2.2 µf
  - Grid to cathode & internal shield, and heater: 2.8 µf
  - Plate to cathode & internal shield, and heater: 2.2 µf

- **Pentode Unit:**
  - Grid No.1 to plate: 0.1 max. µf
  - Grid No.1 to cathode & internal shield, grid No.3, grid No.2, and heater: 9.5 µf
  - Grid No.1 to grid No.3: 0.5 µf
  - Grid No.3 to plate: 2.2 µf
  - Grid No.3 to cathode & internal shield, plate, grid No.2, grid No.1, and heater: 7.0 µf

**Characteristics, Class A1 Amplifier:**

<table>
<thead>
<tr>
<th></th>
<th><strong>Triode Unit</strong></th>
<th><strong>Pentode Unit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plate Supply Voltage</strong></td>
<td>200</td>
<td>150 volts</td>
</tr>
<tr>
<td><strong>Grid-No.3 Supply Voltage</strong></td>
<td>-</td>
<td>0 volts</td>
</tr>
<tr>
<td><strong>Grid-No.2 Supply Voltage</strong></td>
<td>-</td>
<td>100 volts</td>
</tr>
<tr>
<td><strong>Grid-No.1 Supply Voltage</strong></td>
<td>-2</td>
<td>0 volts</td>
</tr>
<tr>
<td><strong>Cathode Resistor</strong></td>
<td>-</td>
<td>180 ohms</td>
</tr>
<tr>
<td><strong>Amplification Factor</strong></td>
<td>70</td>
<td>-</td>
</tr>
<tr>
<td><strong>Plate Resistance (Approx.)</strong></td>
<td>17500</td>
<td>100000 ohms</td>
</tr>
<tr>
<td><strong>Transconductance, Grid No.1 to Plate</strong></td>
<td>4000</td>
<td>4400 µhos</td>
</tr>
<tr>
<td><strong>Transconductance, Grid No.3 to Plate</strong></td>
<td>-</td>
<td>600 µhos</td>
</tr>
</tbody>
</table>
Plate Current ................. 4 ma
Grid-No.2 Current ........... - 2.8 ma
Grid-No.1 Supply Voltage (Approx.)
for plate μ =
10 ................................ -5 – 4 volts
20 ................................... -4 volts
Grid-No.3 Supply Voltage (Approx.)
for plate μ = 20 .................. -7 volts

Mechanical:
Operating Position .............. Any
Type of Cathode .................. Coated Unipotential
Maximum Overall Length ......... 2-5/8"
Maximum Seated Length .......... 2-3/8"
Length, 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 ............. 9PV

Pin 1—Triode Plate
Pin 2—Triode Grid
Pin 3—Cathode, Internal Shield
Pin 4—Heater
Pin 5—Heater

Pin 6—Pentode Grid No.1
Pin 7—Pentode Grid No.3
Pin 8—Pentode Grid No.2
Pin 9—Pentode Plate

GATED AGC AMPLIFIER & NOISE INVERTER
Pentode Unit

For operation in a 525-line, 30-frame system*

Maximum Ratings, Design—Maximum Values:

PLATE VOLTAGE ................ 300 max. volts
PEAK POSITIVE-PULSE PLATE VOLTAGE* .... 600 max. volts
GRID-No.3 (CONTROL-GRID) VOLTAGE:
  Negative-bias value ........ 100 max. volts
  Positive-bias value ......... 0 max. volts
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE .... 300 max. volts
GRID-No.2 VOLTAGE ........ See Grid-No.2 Input Rating Chart at front of Receiving Tube Section
GRID-No.1 (CONTROL-GRID) VOLTAGE:
  Negative-bias value ........ 50 max. volts
  Positive-bias value ......... 0 max. volts
GRID-No.2 INPUT:
  For grid-No.2 voltages
  up to 150 volts ........... 1.1 max. watts
For grid-No. 2 voltages
between 150 volts and
300 volts. ......... See Grid-No. 2 Input Rating Chart
at front of Receiving Tube Section

PLATE DISSIPATION. ............... 2 max. watts

Maximum Circuit Values:
Grid-No. 3—Circuit Resistance .... 0.68 max. megohm
Grid-No. 1—Circuit Resistance:
For fixed-bias operation ......... 0.5 max. megohm
For cathode-bias operation ....... 1 max. megohm

AMPLIFIER — Class A1
Triode Unit

Maximum Ratings, Design—Maximum Values:
PLATE VOLTAGE. .................. 300 max. volts
GRID VOLTAGE:
Negative-bias value ............... 50 max. volts
Positive-bias value ............... 0 max. volts
PLATE DISSIPATION ............... 1.1 max. watts

Maximum Circuit Values:
Grid-Circuit Resistance:
For fixed-bias operation ......... 0.25 max. megohm
For cathode-bias operation ....... 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 As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.
f This rating is applicable when the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.
AVERAGE CHARACTERISTICS
Pentode Unit

$E_t = 6.3$ VOLTS
GRID-No.2 VOLTS = 100
GRID-No.1 VOLTS = 0

PLATE (I_b) OR GRID-No.2 (I_c2) MILLIAMPERES

PLATE VOLS

92CM-11606
AVERAGE CHARACTERISTICS
Pentode Unit

$E_t = 6.3$ VOLTS
PLATE VOLTS = 500
GRID-No.2 VOLTS = 150

GRID-No.3 VOLTS

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

\[ E_g = 6.3 \text{ VOLTS} \]
\[ \text{PLATE VOLTS} = 0 \]
\[ \text{GRID-NO.3 VOLTS} = 0 \]
\[ \text{GRID-NO.2 VOLTS} = 125 \]

GRID-NO.1 VOLTS

GRID-NO.2 MILLIAMPERES

\[ E_g = 6.3 \text{ VOLTS} \]
\[ \text{PLATE VOLTS} = 150 \]
\[ \text{GRID-NO.2 VOLTS} = 100 \]

GRID-NO.1 VOLTS

GRID-NO.2 MILLIAMPERES

92CS-11603

92CS-11596
AVERAGE CHARACTERISTICS
Pentode Unit

$E_g = 6.3 \text{ VOLTS}$
$\text{PLATE VOLTS} = 150$
$\text{GRID-No.2 VOLTS} = 100$

GRID-No.1 VOLTS

PLATE MILLIAMPERES

92CS-11614