Beam Power Tube

NOVAR TYPE

SEPARATE GRID-No.3 BASE-PIN TERMINAL FOR "SNIVETS" CONTROL

For Horizontal-Deflection-Amplifier Service in Low-B+ Black-and-White TV Receivers

Electrical:

Heater Characteristics and Ratings:
- Voltage (AC or DC) .............. 6.3 ± 0.6 volts
- Current at heater volts = 6.3 ........ 1.600 amp
- Peak heater-cathode voltage:
  - Heater negative with respect to cathode ........ 200 max. volts
  - Heater positive with respect to cathode .......... 200 max. volts

Direct Interelectrode Capacitances (Approx.)
- Grid No.1 to plate .............. 0.7 pf
- Input: G1 to (K,G3,G2,H) .............. 22.0 pf
- Output: P to (K,G3,G2,H) .............. 9.0 pf

Mechanical:

Operating Position .............. Any
Type of Cathode .............. Coated Unipotential
Maximum Overall Length .............. 3.130"
Seated Length .............. 2.500" to 2.750"
Diameter .............. 1.438" to 1.562"
Dimensional Outline .............. See General Section
Bulb .............. T12
Base .............. Large-Button Novar 9-Pin with Exhaust Tip
  (JEDEC No. E9-88)
Basing Designation for BOTTOM VIEW .............. 90U

Pin 1-Grid No.2
Pin 2-Grid No.1
Pin 3-Cathode
Pin 4-Heater
Pin 5-Heater
Pin 6-Grid No.3
Pin 7-Grid No.2
Pin 8-Do Not Use
Pin 9-Plate

Characteristics, Class A1 Amplifier:

<table>
<thead>
<tr>
<th>Triode Connection</th>
<th>Pentode Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>125</td>
</tr>
<tr>
<td>Grid No.3, Connected to cathode at socket</td>
<td>125</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>-</td>
</tr>
<tr>
<td>Grid-No.1 Voltage</td>
<td>-20</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>4.1</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>-</td>
</tr>
<tr>
<td>Transconductance</td>
<td>-</td>
</tr>
<tr>
<td>Plate Current</td>
<td>-</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>-</td>
</tr>
<tr>
<td>Grid-No.1 Voltage (Approx.) for plate ma = 1.0</td>
<td>-</td>
</tr>
</tbody>
</table>

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

DATA 1
10-64
HORIZONTAL-DEFLECTION AMPLIFIER

Maximum Ratings, Design-Maximum Values:

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Plate Supply Voltage</td>
<td>770 max. volts</td>
</tr>
<tr>
<td>Peak-Positive-Pulse Plate Voltage</td>
<td>6500 max. volts</td>
</tr>
<tr>
<td>Peak Negative-Pulse Plate Voltage</td>
<td>1500 max. volts</td>
</tr>
<tr>
<td>DC Grid-No.3 (Suppressor-Grid) Voltage</td>
<td>75 max. volts</td>
</tr>
<tr>
<td>DC Grid-No.2 (Screen-Grid) Voltage</td>
<td>220 max. volts</td>
</tr>
<tr>
<td>DC Grid-No.1 (Control-Grid) Voltage:</td>
<td>55 max. volts</td>
</tr>
<tr>
<td>Cathode Current:</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>950 max. ma</td>
</tr>
<tr>
<td>Average</td>
<td>275 max. ma</td>
</tr>
<tr>
<td>Grid-No.2 Input</td>
<td>3.5 max. watts</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>17 max. watts</td>
</tr>
<tr>
<td>Bulb Temperature (At hottest point on bulb surface)</td>
<td>220 max. °C</td>
</tr>
</tbody>
</table>

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:
For grid-No.1-resistor-bias operation         2.2 max. megohms

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a A positive voltage may be applied to grid No.3 to reduce interference from "snivets" which may occur in television receivers. A typical value for this voltage is 30 volts.
b The dc component must not exceed 100 volts.
c Without external shield.
d With grid No.2 connected to plate at socket.
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.
f As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.
g This rating is applicable where 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.
h An adequate bias resistor or other means is required to protect the tube in the absence of excitation.
AVERAGE CHARACTERISTICS

$E_f = 6.3$ VOLTS
GRID No. 3 CONNECTED TO
CATHODE AT SOCKET.
GRID-No. 2 VOLTS = 125

GRID-No. 2 MILLIAMPERES ($I_{C2}$)

PLATE MILLIAMPERES ($I_B$)
AVERAGE PLATE CHARACTERISTICS

E_{p} = 63 VOLTS
GRID No. 3 CONNECTED TO
CATHODE AT SOCKET.
GRID-No.1 VOLTS = 0

PLATE MILLIAMPERES

PLATE VOLTS

1000  800  600  400  200  0

100  200  300  400  500

92CM-11923RI