Beam Power Tube

NOVAR TYPE
SEPARATE GRID-No 3 BASE-PIN TERMINAL FOR "SNIVES" CONTROLa

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

Electrical:

Heater Ratings and Characteristics:
Voltage (AC or DC) .................. 6.3 ± 0.6 volts
Current at heater volts = 6.3 .... 1.200 amp
Peak heater-cathode voltage:
Heater negative with respect to cathode. 200 max. volts
Heater positive with respect to cathode. 200 max. volts
Direct Inter-electrode Capacitance (Approx.):c
Grid No.1 to plate ................ 0.26 pf
Input: G1 to (K,G3,G2,H) ............. 15.0 pf
Output: P to (K,G3,G2,H) ............. 6.5 pf

Mechanical:

Operating Position ................... Any
Type of Cathode .................. Coated Unipotential
Max. Overall Length ................. 2.880"
Seated Length .................. 2.250" to 2.500"
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 ........ 9QU

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:

Plate Voltage .................. 150 60 250 volts
Grid No.3 .................. — Connected to Cathode at socket
Grid-No.2 Voltage .................. 150 150 150 volts
Grid-No.1 Voltage ................. -22.5 0 -22.5 volts
Amplification Factor ................. 4.4 — —
Plate Resistance (Approx.) .......... — — 15000 ohms
Transconductance ................ — — 7100 μmhos

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DATA I
10-64
<table>
<thead>
<tr>
<th></th>
<th>Triode Connection</th>
<th>Pentode Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Current</td>
<td>-</td>
<td>390°  70 ma</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>-</td>
<td>32°  2.1 ma</td>
</tr>
<tr>
<td>Grid-No.1 Voltage (Approx.) for plate ma = 1</td>
<td>-</td>
<td>-42 volts</td>
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**HORIZONTAL-DEFLECTION AMPLIFIER**

**Maximum Ratings, Design-Maximum Values:**

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

- DC Plate Supply Voltage: 770 max. volts
- Peak Positive-Pulse Plate Voltage: 6500 max. volts
- Peak Negative-Pulse Plate Voltage: 1500 max. volts
- DC Grid-No.3 (Suppressor-Grid) Voltage: 70 max. volts
- DC Grid-No.2 (Screen-Grid) Voltage: 220 max. volts
- DC Grid-No.1 (Control-Grid) Voltage:
  - Negative-bias value: 55 max. volts
  - Peak Negative-Pulse Grid-No.1 Voltage: 330 max. volts
- Cathode Current:
  - Peak: 550 max. ma
  - Average: 175 max. ma
- Grid-No.2 Input: 3.5 max. watts
- Plate Dissipation:
  - without external shield: 17.5 max. watts
  - on bulb surface: 240 max. °C

**Maximum Circuit Values:**

- Grid-No.1-Circuit Resistance: 1 max. megohm

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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 wave form 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=150

GRID-NB MILLIAMPERES ($I_{C2}$)

PLATE MILLIAMPERES ($I_b$)

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DATA 2
10-64