# Beam Power Tube

**NOVAR TYPE**

**SPECIAL MULTIPLE-FIN PLATE STRUCTURE**

**SPECIALY FORMULATED ENVELOPE GLASS**

*For Color-TV Horizontal-Deflection-Amplifier Applications*

## ELECTRICAL

### Heater Characteristics and Ratings

- **Voltage (AC or DC):** 6.3 ± 0.6 V
- **Current at 6.3 V:** 1.600 A
- **Maximum heater-cathode voltage:**
  - Heater negative with respect to cathode: 200 V
  - Heater positive with respect to cathode: 200 V
  - DC component: 100 V

### Direct Interelectrode Capacitances (Approx.)

Without external shield:
- **Grid No. 1 to plate:** 1.2 pF
- **Input: G1 to (K, G3, G2, H):** 22 pF
- **Output: P to (K, G3, G2, H):** 9.0 pF

## MECHANICAL

- **Operating Position:** Any
- **Type of Cathode:** Coated Unipotential
- **Maximum Overall Length:** 3.550 in
- **Seated Length:** 2.910 to 3.170 in
- **Diameter:** 1.438 to 1.562 in
- **Dimensional Outline:** See General Section
- **Bulb:** T12
- **Cap:** Skirted Miniature (JEDEC No. Cl-2 or Cl-3)
- **Base:** Large-Button Novar 9-Pin with Exhaust Tip (JEDEC E9-88)
- **Basing Designation for BOTTOM VIEW:** 9QL

## CHARACTERISTICS

*For the following characteristics, see Conditions*

- **Triode Connection:**
  - **Amplification Factor:** 4
  - **Plate Resistance:** 6000 Ω
  - **Transconductance:** 9500 μmho
  - **DC Plate Current:** 560 mA

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**RADIO CORPORATION OF AMERICA**

Electronic Components and Devices

Harrison, N. J.

DATA 1 9-65
DC Grid-No.2 Current: 31° mA
Cutoff DC Grid-No.1 Voltage: -110 V
Plate mA = 1

Conditions
Heater Voltage: 6.3 V
Peak Positive-Pulse Plate Voltage: 6500 V
DC Plate Voltage: -60 140 140 V
DC Grid-No.3 Voltage: 30 30 0 30 V
DC Grid-No.2 Voltage: 140 140 140 V
DC Grid-No.1 Voltage: 0 -24.5 -24.5 V

MAXIMUM RATINGS, DESIGN-MAXIMUM VALUES
For operation in a 325-line, 30-frame system
DC Plate Supply Voltage: 770 V
Peak Positive-Pulse Plate Voltage: 6500 V
Peak Negative-Pulse Plate Voltage: 1500 V
DC Grid-No.3 Voltage: 75 V
DC Grid-No.2 (Screen-Grid) Voltage: 220 V
Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage: 330 V
Cathode Current
Peak: 950 mA
Average: 275 mA
Grid-No.2 Input: 3.5 W
Plate Dissipation: 20 W
Envelope Temperature: 240 °C
At hottest point on bulb surface

MAXIMUM CIRCUIT VALUES
Grid-No.1-Circuit Resistance
For grid-No.1-resistor-bias operation: 0.47 MΩ
For plate-pulsed operation: 10 MΩ

a) Designed to minimize secondary-electron emission from plate and eliminate "knee" discontinuities in zero-bias region.
b) Designed to reduce glass problems after long periods of high-voltage and elevated temperature operation.
c) With grid No.3 and grid No.2 connected, respectively, to cathode and plate at socket.
d) This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.
e) This rating is applicable where the duration of the voltage pulse does not exceed 15 percent of one horizontal scanning cycle. In a 325-line, 30-frame system, 15 percent of one horizontal scanning cycle is 10 microseconds.
f) In horizontal-deflection-amplifier service, a positive voltage may be applied to grid No.3 to reduce interference from "snivets" which may occur in both vhf and uhf television receivers. A typical operating value for this voltage is 30 volts.
g) An adequate bias resistor or other means is required to protect the tube in the absence of excitation.
Typical Characteristics

$E_t = 6.3$ VOLTS
GRID—No. 3 VOLTS = 30
GRID—No. 2 VOLTS = 140

GRID—No. 2 MILLIAMPERES ($I_{C2}$)

PLATE MILLIAMPERES ($I_D$)
Typical Plate Characteristics

$E_f = 6.3$ VOLTS
GRID-No. 3 VOLTS = 30
GRID-No. 1 VOLTS = 0

PLATE MILLIAMPERES

92CM-13153