Beam Power Tube

NOVAR TYPE
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 V
Current at 6.3 V.................................. 1.600 A
Maximum heater-cathode voltage:
  Heater negative with respect to cathode:
    Peak........................................... 200 V
  Heater positive with respect to cathode:
    Peak........................................... 200 V
    DC component.................................. 100 V

Direct Interelectrode Capacitances (Approx.)
Grid No.1 to plate................................ 1.2 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................................ 3.550 in
Seated Length....................................... 2.910 to 3.170 in
Diameter.............................................. 1.438 to 1.562 in
Dimensional Outline................................ See General Section
Bulb....................................................... Ti2
Cap.................................................. Skirted Miniature (JEDEC No.C1-2 or C1-3)
Base.................................................. Large-Button Novar 9-Pin with Exhaust Tip (JEDEC No.E9-88)

TERMINAL DIAGRAM (Bottom View)

CHARACTERISTICS
Peak Positive-Pulse Plate Voltage.................. 6500 – – V
Plate Voltage.......................................... – 50 130 V
Grid No.3.............................................. Connected to cathode at socket
Grid-No.2 Voltage.................................. 125 125 125 V
Grid-No.1 Voltage.................................. – 0 –20 V
Plate Resistance (Approx.)......................... – – 12000 Ω
Transconductance................. - - 10000 \( \mu \)mho
Plate Current...................... - 525\( ^\circ \) 80 mA
Grid-No.2 Current.................. 32\( ^\circ \) 2.5 mA
Grid-No.1 Voltage (Approx.)........ -125 -40 V
For plate mA = 1
Triode Amplification Factor (Triode
connection: grid No.2 connected to
plate at socket. Plate volts =
grid-No.2 volts = 125; grid-No.1
volts = -20)...................... - 4.1

HORIZONTAL-DEFLECTION AMPLIFIER
Maximum Ratings, Design-Maximum Values

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

DC Plate Supply Voltage.................. 770 V
Peak Positive-Pulse Plate Voltage\(^d\)........ 6500 V
Peak Negative-Pulse Plate Voltage........ 1500 V
DC Grid-No.3 Voltage\(^e\).................. 100 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\(^f\)...................... 17 W
Bulb Temperature
At hottest point on bulb surface........ 240 \( ^\circ \)C

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance
For grid-resistor-bias operation\(^f\)........ 0.47 M\( \Omega \)
For plate-pulsed operation.............. 10 M\( \Omega \)

\(^a\) Without external shield.
\(^b\) Under conditions shown in footnote\(^d\).
\(^c\) This value can be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.
\(^d\) This rating is applicable where the duration of the voltage pulse does not exceed 15 percent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 percent of one horizontal scanning cycle is 16 microseconds.
\(^e\) 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 value for this voltage is 50 volts.
\(^f\) An adequate bias resistor or other means is required to protect the tube in the absence of excitation.
Average Characteristics

E\textsubscript{f} = 6.3 VOLS
GRID No. 3 CONNECTED TO CATHODE AT SOCKET.
GRID No. 1 VOLS = 0

PLATE MILLIAMPERES

PLATE VOLTS

92CM-11923R2