Beam Power Tube
with an Integral Diode

9-PIN MINIATURE TYPE

PLATE DISSIPATION = 10 WATTS

DARK HEATER

For Feedback-Stabilized Vertical Deflection
Amplifier Applications in Black-and-White and Color TV Receivers

ELECTRICAL CHARACTERISTICS

Bogey Values

Heater Voltage (AC or DC) ... \( E_h \) 6.3 V
Heater Current ... \( I_h \) 1.2 A

Direct Interelectrode Capacitances

Without external shield
Grid No.1 to plate ... \( e_{g1-p} \) 0.32 pF
Input: G1 to \((K, G3+P_D, G2, H)\) ... \( c_i \) 13.0 pF
Output: P to \((K, G3+P_D, G2, H)\) ... \( c_o \) 6.0 pF

For the following characteristics, see Conditions

Amplification Factor
(Triode Connection)* ... \( \mu \) 6.5

Plate Resistance (Approx.) ... \( r_p \) 10.5 kΩ

Transconductance ... \( g_m \) 4200 \( \mu \)mho

DC Plate Current ... \( I_b \) 150\(^a\) 35 mA

DC Grid-No.2 Current ... \( I_{c2} \) 20\(^b\) 2.5 mA

Cutoff DC Grid-No.1 Voltage ... \( E_{cl(co)} \) -37 V

Plate mA = 1

Instantaneous Diode-Plate-to-Cathode-Voltage Drop for instantaneous diode-plate current
\( (r_b(d)) = 2 \text{ mA.} \) ... \( e_{b(d)} \) 5 V

Conditions

Heater ... \( E_h \) 6.3 6.3 V

DC Plate Voltage ... \( E_b \) 40 140 V

DC Grid-No.3 Voltage ... \( E_{c3} \) 0 0 V

DC Grid-No.2 Voltage ... \( E_{c2} \) 120 140 V

DC Grid-No.1 Voltage ... \( E_{cl} \) 0 -18 V

MECHANICAL CHARACTERISTICS

Operating Position ... Any

Type of Cathode ... Coated Unipotential

Dimensional Outline (JEDEC 6-4) ... See General Section

Maximum Overall Length ... 3.062 in (77.77 mm)

Maximum Seated Length ... 2.812 in (71.42 mm)

Maximum Diameter ... 0.875 in (22.22 mm)

Envelope ... JEDEC Designation T6-1/2

Base ... Small-Button Noval 9-Pin (JEDEC Designation E9-1)

Terminal Diagram ... 9RA
TERMINAL DIAGRAM (Bottom View)

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

DESIGN-MAXIMUM RATINGS

For operation as a Feedback-Stabilized Vertical-Deflection-Amplifier Tube in Black- & White & Color Television Receivers in a 525-line, 30-frame system

DC Plate Voltage \( E_b \) 425 V
Peak Positive-Pulse Plate Voltage (Absolute-Maximum Value) \( e_{bm} \) 2000 V
\( +10 \) V
DC Grid-No. 3 & Diode-Plate Voltage, \( E_{C3}, E_{B(d)} \) -150 V
DC Grid-No. 2 (Screen-Grid) Voltage \( E_{C2} \) 330 V
Peak Negative-Pulse Grid-No. 1 (Control-Grid) Voltage \( e_{C1m} \) 150 V
Heater-Cathode Voltage
Peak \( e_{hk} \) ±200 V
Average \( E_{hk(\text{av})} \) 100 V
Heater Voltage (AC or DC) \( E_h \) 5.7 to 6.9 V
Cathode Current
Peak \( i_{km} \) 250 mA
Average \( i_{k(\text{av})} \) 70 mA

Average Diode-Plate (& Grid-No. 3) Current \( I_{b(\text{av})(\text{d})} \) 1 mA
Grid-No. 2 Input \( P_{b2} \) 2 W
Plate Dissipation \( P_b \) 10 W
Envelope Temperature (At hottest point on envelope surface) \( T_e \) 240 °C

MAXIMUM CIRCUIT VALUES

Grid-No. 1-Circuit Resistance \( R_{g1(\text{ckt})} \)
For grid-No. 1-resistor-bias operation \( - \) 2.2 MΩ
For cathode-bias operation \( - \) 2.2 MΩ

a With grid No. 3 and diode plate connected to cathode and with grid No. 2 connected to plate at socket.
b This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.
c Unless otherwise specified.
d This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 ms.
e Measured with a dc meter.