Beam Power Tube

NOVAR TYPE
SPECIAL PLATE STRUCTURE

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 .................................. 2.500 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.)
Without external shield
  Grid No.1 to plate .................................. 0.56 pF
  Input: G1 to (K, G3, G2, H) .................. 22 pF
  Output: P to (K, G3, G2, H) .................. 11 pF

MECHANICAL

Operating Position .................................. Any
Type of Cathode .................................. Coated Unipotential
Maximum Overall Length ................................ 4.130 in
Seated Length .................................. 3.500 to 3.750 in
Diameter .................................. 1.448 to 1.562 in
Dimensional Outline (JEDEC No.12-116)  See General Section
Bulb .................................. T1/2
Cap. .................................. Small (JEDEC No.C1-1)
Base .................................. Large-Button Novar 9-Pin with Exhaust Tip
  (JEDEC No.E9-88)
Basing Designation for BOTTOM VIEW ............ 9QL

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

CHARACTERISTICS

Plate Voltage .................................. - 55 175 - 60 175 V
Peak Positive-Pulse
  Plate Voltage .................................. 5000 - - 5000 - - V
  Grid-No.3 Voltage .................................. +30 +30 +30 +30 +30 V
  Grid-No.2 Voltage .................................. 125 125 125 145 145 V
  Grid-No.1 Voltage .................................. 0 -25 - 0 -35 V
  Plate Resistance (Approx.) .................. 7500 Ω
  Transconductance .............................. 9600 - - 7500 μmhos

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DATA 1
9-65
Plate Current: 580°C - 130 - 710°C 95 mA
Grid-No.2 Current: 40°C 2.8 - 55°C 2.4 mA
Grid-No.1 Voltage (Approx.) for plate
mA = 1. -120 - -54 -125 -60 V
Triode Amplification Factor (Triode connection: grid No.2 connected to plate at socket): 3d - 2.8e

HORIZONTAL-DEFLECTIONAMPLIFIER
Maximum Ratings, Design-Maximum Values
For operation in a 525-line, 30-frame system
DC Plate Supply Voltage: 990 V
Peak Positive-Pulse Plate Voltage: 7500 V
Peak Negative-Pulse Plate Voltage: 1100 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: 1200 mA
Average: 350 mA
Grid-No.2 Input: 5 W
Plate Dissipation: 30 W
Bulb Temperature: 250 °C
At hottest point on bulb surface

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

(Horizontal-deflection circuits only)

a Designed to minimize secondary-electron emission from plate and eliminate "knee" discontinuities in zero-bias region.

b Under conditions shown in footnote.

c 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.

d Plate volts = grid-No.2 volts = 125; grid No.3 connected to cathode at socket; grid-No.1 volts = -25.

e Plate volts = grid-No.2 volts = 145; grid No.3 connected to cathode at socket; grid-No.1 volts = -35.

f 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.

g In horizontal-deflection-amplifier service, a positive voltage should be applied to grid No.3 to reduce interference from "snippets", which may occur in both vhf and uhf television receivers, and to increase power output. A typical value for this voltage is 30 volts.

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 VOLTS = +30
GRID-No. 1 VOLTS = 0

PLATE MILLIAMPERES

PLATE VOLTS

92CM-13054
Average Characteristics

E₁ = 6.3 VOLTS
GRID—No. 3 VOLTS = +30
GRID—No. 2 VOLTS = 125

GRID—No. 2 MILLIAMPERES (I₁C₂)

PLATE MILLIAMPERES (Iₚ)

92CM-13055

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