

Beam Power Tube

Pb = 30 W Novar Type Overload Pb = 200 W
For Color-TV Horizontal-Deflection Amplifier Circuits
Using 270 V to over 400 V "B" Supplies

ELECTRICAL CHARACTERISTICS—Bogey Values

Heater Voltage, ac or dc.	E_h	6.3	V
Heater Current	I_h	2.5	A
Direct Interelectrode Capacitances: ^a			
Grid No.1 to plate	c_{g1-p}	0.56	pF
Input: G1 to (K,G3,G2,H)	c_i	22	pF
Output: P to (K,G3,G2,H)	c_o	11	pF

For the following characteristics, see Conditions below:

Amplification Factor (Triode Connection) ^b . μ	-	-	3 ^c	-	-	2.8 ^d	
Plate Resistance (Approx.)	r_p	-	-	5800	-	-	7000 Ω
Transconductance . . .	g_m	-	-	9600	-	-	7500 μmho
DC Plate Current . . .	I_b	-	580 ^e	130	-	710 ^e	95 mA
DC Grid-No.2 Current	I_{c2}	-	40 ^e	2.8	-	55 ^e	2.4 mA
Cutoff DC Grid-No.1 Voltage for $I_b = 1$ mA	$E_{c1(co)}$	-120	-	-54	-125	-	-60 V

Conditions:

Heater Voltage	E_h	$\longleftrightarrow$		6.3	$\longrightarrow$		V
Peak Positive-Pulse Plate Voltage ^f	e_{bm}	5000	-	-	5000	-	- V
DC Plate Voltage . . .	E_b	-	55	175	-	60	175 V
DC Grid-No.3 Voltage	E_{c3}	30	30	30	30	30	30 V
DC Grid-No.2 Voltage	E_{c2}	125	125	125	145	145	145 V
DC Grid-No.1 Voltage	E_{c1}	-	0	-25	-	0	-35 V

MECHANICAL CHARACTERISTICS

Dimensional Outline JEDEC No.12-117
Envelope. JEDEC Designation T12
Top Cap^g Small (JEDEC Designation C1-1)
Base^h Large-Button Novar 9-Pin with Exhaust Tip
(JEDEC Designation E9-88)

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Terminal Connections

(See *TERMINAL DIAGRAM*) JEDEC Designation 9QL

Type of Cathode Coated Unipotential

MAXIMUM RATINGS—Design-Maximum Values^k

For operation as a Horizontal-Deflection-Amplifier Tube in a 525-line, 30-frame system

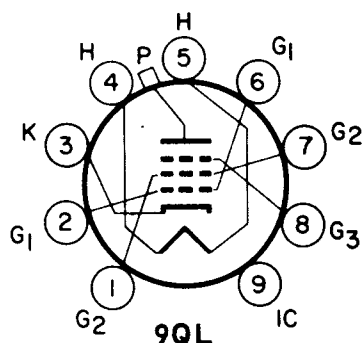
DC Plate Supply Voltage	E_{bb}	990	V
Peak Positive-Pulse Plate Voltage ^m	e_{bm}	7500	V
Peak Negative-Pulse Plate Voltage	$-e_{bm}$	1100	V
DC Grid-No.3 Voltage ⁿ	E_{c3}	75	V
DC Grid-No.2 (Screen-Grid) Voltage	E_{c2}	220	V
Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage	$-e_{clm}$	330	V
Heater-Cathode Voltage:			
Peak	e_{hkm}	±200	V
Average	E_{hk}	100	V
Heater Voltage, ac or dc	E_h	5.7 to 6.9	V
Cathode Current:			
Peak	i_{km}	1200	mA
Average	$I_{k(av)}$	350	mA
Grid-No.2 Input	P_{g2}	5	W
Plate Dissipation ^p	P_b	30	W
Temporary Overload Plate Dissipation ^q	P_b	200	W
Envelope Temperature (at hottest point on envelope surface).	T_E	250	°C

MAXIMUM CIRCUIT VALUES

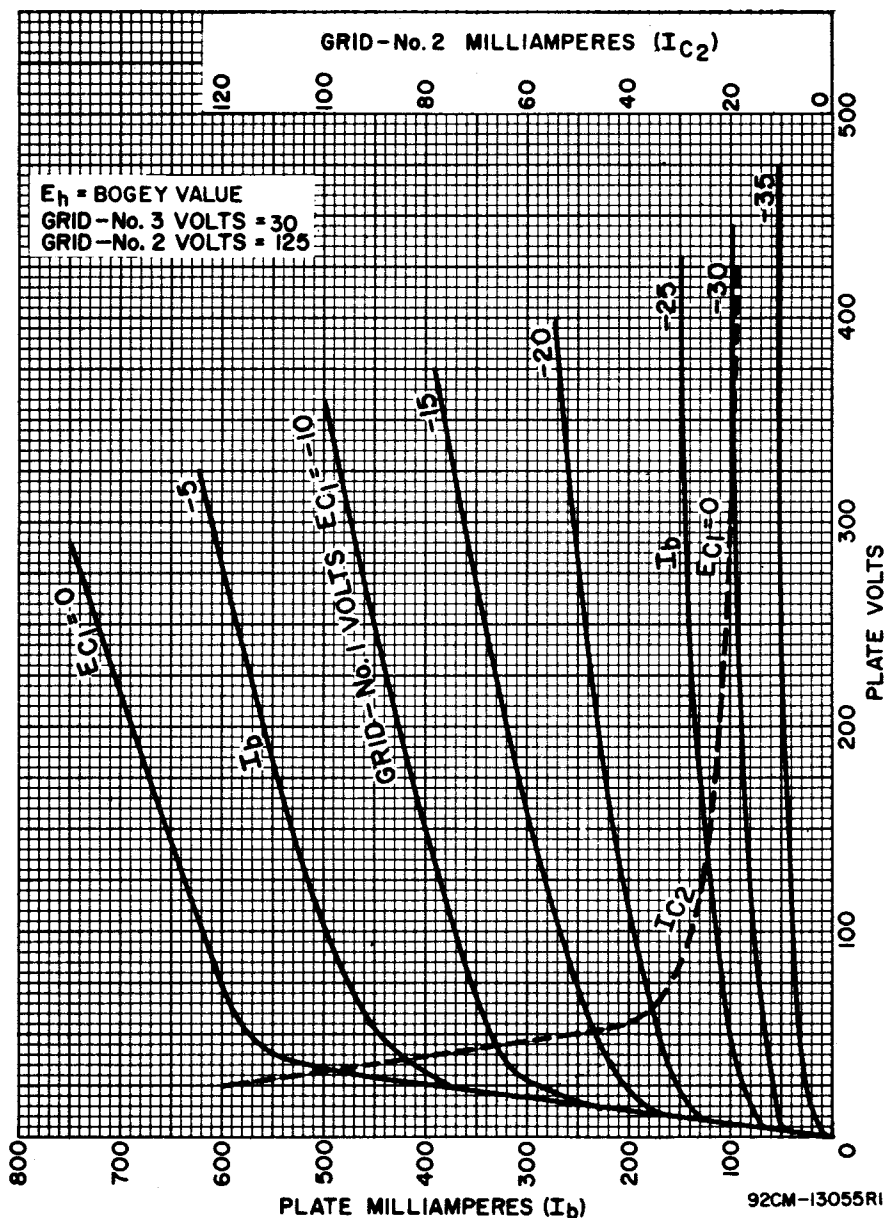
Grid-No.1-Circuit Resistance:	$R_{g1(ckt)}$		
For grid-No.1-resistor-bias operation	-	0.47	MΩ
For plate-pulsed operation (horizontal-deflection circuits only)	-	10	MΩ

TERMINAL DIAGRAM (Bottom View)

- 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
- Top Cap - Plate



TYPICAL CHARACTERISTICS



- a Measured without external shield in accordance with the current issue of EIA Standard RS-191.
- b With grid No.3 and grid No.2 connected, respectively, to cathode and plate at socket.
- c Conditions: $E_b = E_{c2} = 125 \text{ V}$, $E_{c1} = -25 \text{ V}$.
- d Conditions: $E_b = E_{c2} = 145 \text{ V}$, $E_{c1} = -35 \text{ V}$.
- e This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.
- f Under pulse-duration condition specified in Footnote m.

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- g Designed to mate with connector of 0.360-inch cap, generally available from your local RCA Distributor.
- h Designed to mate with "Novar 9-Contact" Socket generally available from your local RCA Distributor.
- k As defined in the current issue of EIA Standard RS-239.
- m This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one scanning cycle is 10 μ s.
- n In horizontal-deflection-amplifier service, a positive voltage should be applied to grid No.3 to reduce interference from "snivets", which may occur in both vhf and uhf television receivers, and to increase power output. A typical value is 30 V.
- p An adequate bias resistor or other means is required to protect the tube in the absence of excitation.
- q Total continuous or accumulated time not to exceed 40 seconds.

TYPICAL CHARACTERISTICS

