

Beam Power Tube

T12 NOVAR TYPE

 $P_b = 30 \text{ W}$ Overload $P_b = 200 \text{ W}$

Electrical Characteristics — Bogey Values

Heater Voltage, ac or dc	E_h	6.3	V
Heater Current	I_h	2.3	A
Direct Interelectrode Capacitances: ^a			
Grid No. 1 to plate	c_{g1-p}	0.6	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	—	—	3.5 ^c	
Plate Resistance (Approx.) r_p	—	—	5800	Ω
Transconductance	gm	—	9600	μmho
DC Plate Current	I_b	—	580 ^d	130 mA
DC Grid-No. 2 Current ..	I_{c2}	—	40 ^d	2.8 mA
Cutoff DC Grid-No. 1				
Voltage for $I_b = 1 \text{ mA}$..	$E_{c1}(co)$	-125	—	-44 V

Conditions:

Heater Voltage	E_h	← 6.3 →			V
Peak Positive-Pulse					
Plate Voltage ^a	e_{bm}	5000	—	—	V
DC Plate Voltage	E_b	—	55	175	V
DC Grid-No. 3 Voltage . .	E_{c3}	0	30	30	V
DC Grid-No. 2 Voltage . .	E_{c2}	125	125	125	V
DC Grid No. 1 Voltage . .	E_{c1}		0	-25	V

Mechanical Characteristics

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

Terminal Connections

(See TERMINAL DIAGRAM)	JEDEC 9QL
Type of Cathode	Coated Unipotential
Operating Position	Any

Maximum Ratings — Design-Maximum Values ^f

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 ^g	e_{bm}	7500	V
Peak-Negative-Pulse Plate Voltage ...	$-e_{bm}$	1100	V



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DC Grid-No. 3 Voltage ^h	E_{c3}	75	V
DC Grid-No. 2 (Screen-Grid) Voltage	E_{c2}	220	V
Peak Negative-Pulse Grid-No. 1 (Control-Grid) Voltage	$-e_{c1m}$	330	V
Heater-Cathode Voltage:			
Peak	e_{hkm}	± 200	V
Average	E_{hk}	100	V
Heater Voltage	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 ⁱ	P_b	30	W
Temporary Overload Plate Dissipation ^k :	P_b	200	W
Envelope Temperature (at hottest point on envelope surface)	T_E	250	°C

Maximum Circuit Values

Grid-No. 1-Circuit Resistance:	$R_{g(ckt)}$	
Cathode Bias		1.0 megohm
(with min. $R_K = 100 \Omega$)		
Grid-leak Bias		10.0 megohms
(with signal peak clamped to zero bias)		
Fixed Bias		0.47 megohm
(where positive grid current is not drawn)		

a Measured without external shield in accordance with the current issue of EIA Standard RS-191B.

b With grid No. 3 and grid No. 2 connected, respectively, to cathode and plate at socket.

c Conditions: $E_b = E_{c2} = 125 \text{ V}$, $E_{c1} = -25 \text{ V}$.

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 Under pulse-duration condition specified in *Footnote g*.

f As defined in the current issue of EIA Standard RS-239A.

g 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 μs .

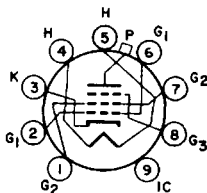
h In horizontal-deflection-amplifier service, a positive voltage should be applied to grid No. 3 to reduce interference from "snivets", which may occur in both vhf and uhf television receivers, and to increase power output. A typical value is 30 V.

j An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

k Total continuous or accumulated time not to exceed 40 seconds.

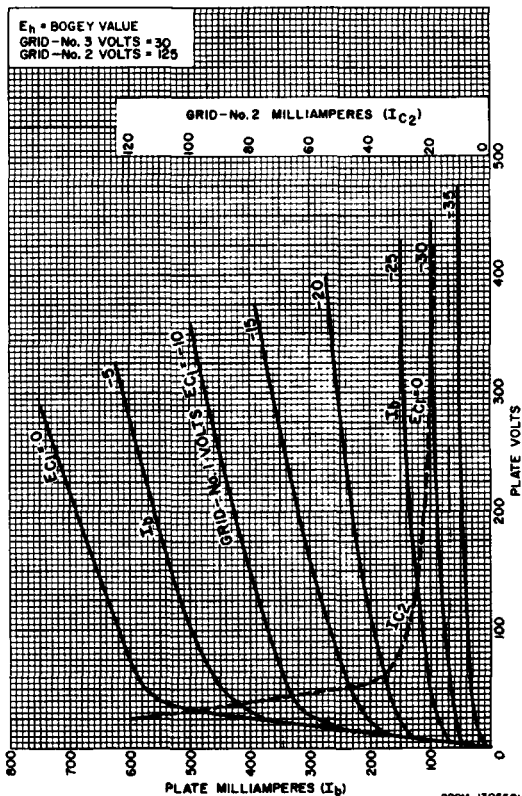
TERMINAL DIAGRAM (BOTTOM VIEW)

- 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

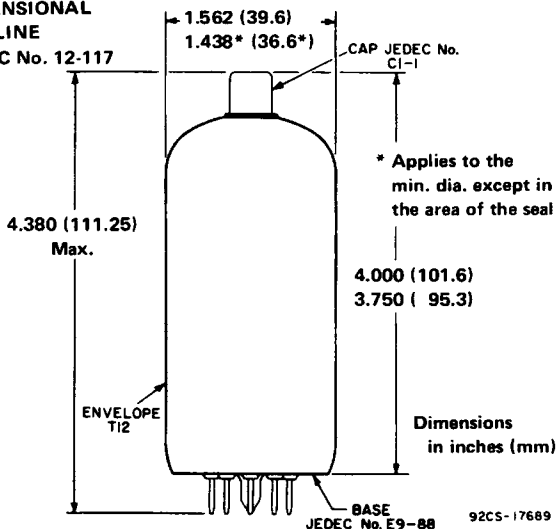
TYPICAL CHARACTERISTICS



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DIMENSIONAL OUTLINE

JEDEC No. 12-117



TYPICAL CHARACTERISTICS

