

Beam Power Tube

NOVAR TYPE

*For Horizontal-Deflection-Amplifier Service
in Low-B+, Black-and-White TV Receivers*

ELECTRICAL CHARACTERISTICS

Bogey Values

Heater Voltage (AC or DC)	E_h	6.3	V
Heater Current.	I_h	1.600	A
Direct Interelectrode Capacitances			
Without external shield			
Grid No.1 to plate.	C_{g1-p}	1.2	pF
Input: G1 to (K, G3, G2, H).	C_i	22	pF
Output: P to (K, G3, G2, H).	C_o	9.0	pF

For the following characteristics, see Conditions

Amplification Factor.	μ	-	-	4.7	-
Triode connection ^a					
Plate Resistance (Approx.).	r_p	-	-	-	18 $k\Omega$
Transconductance.	g_m	-	-	-	7000 $\mu mhos$
DC Plate Current.	I_b	-	470 ^b	-	45 mA
DC Grid-No.2 Current.	I_{c2}	-	32 ^b	-	1.5 mA
Cutoff DC Grid-No.1 Voltage	$E_{c1(c0)}$	-75	-	-	-32 V

Plate mA = 1

Conditions

Heater Voltage.	E_h	Bogey value				V
Peak Positive-Pulse						
Plate Voltage ^c	e_{bm}	6500	-	-	-	V
DC Plate Voltage.	E_b	-	50	125	130	V
Grid No.3	Connected to cathode at socket					
DC Grid-No.2 Voltage.	E_{c2}	125	125	125	125	V
DC Grid-No.1 Voltage.	E_{c1}	-	0	-20	-20	V

MECHANICAL CHARACTERISTICS

Operating Position.	Any
Type of Cathode	Coated Unipotential
Maximum Overall Length.	3.550 in
Maximum Seated Length	3.170 in
Maximum Diameter.	1.562 in
Dimensional Outline	See <i>General Section</i>
Envelope.	JEDEC T12
Top Cap	Skirted Miniature (JEDEC C1-2 or C1-3)
Bases (alternates)	

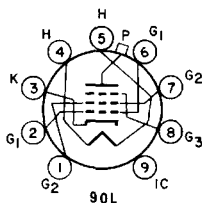
Large-Button Novar 9-Pin (JEDEC E9-76)

Large-Button Novar 9-Pin with Exhaust Tip (JEDEC F9-88)



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



DESIGN-MAXIMUM RATINGS

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

DC Plate Supply Voltage	E _{bb}	770	V
Peak Positive-Pulse Plate Voltage ^d . .	e _{bm}	6500	V
Peak Negative-Pulse Plate Voltage . .	-e _{bm}	1500	V
DC Grid-No.3 Voltage ^e	E _{c3}	75	V
DC Grid-No.2 (Screen-Grid) Voltage. .	E _{c2}	220	V
DC Grid-No.1 (Control-Grid) Voltage .	-E _{c1}	55	V
Negative-bias value			
Peak Negative-Pulse Grid-No.1 Voltage	-e _{c1m}	330	V
Heater-Cathode Voltage			
Peak.	e _{hkm}	±200	V
Average	E _{hk(av)}	100	V
Heater Voltage (AC or DC)	E _h	5.7 to 6.9	V
Cathode Current			
Peak.	i _{km}	950	mA
Average	i _{k(av)}	275	mA
Grid-No.2 Input	P _{g2}	3.5	W
Plate Dissipation ^f	P _b	17	W
Envelope Temperature.	T _E	240	°C
At hottest point on envelope surface			

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

^a 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.

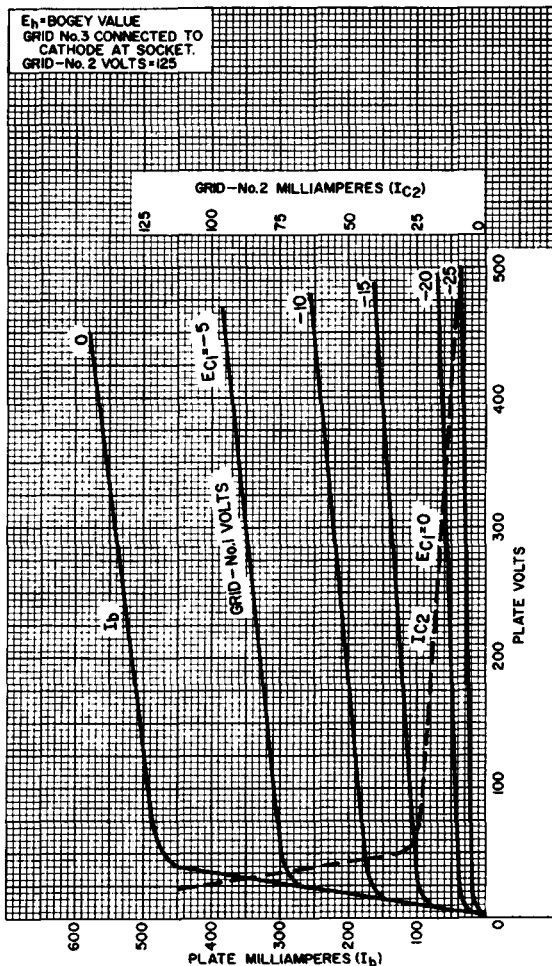
^c Under pulse-duration condition specified in Footnote d.

^d This rating is applicable where 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 horizontal scanning cycle is 10 μs.

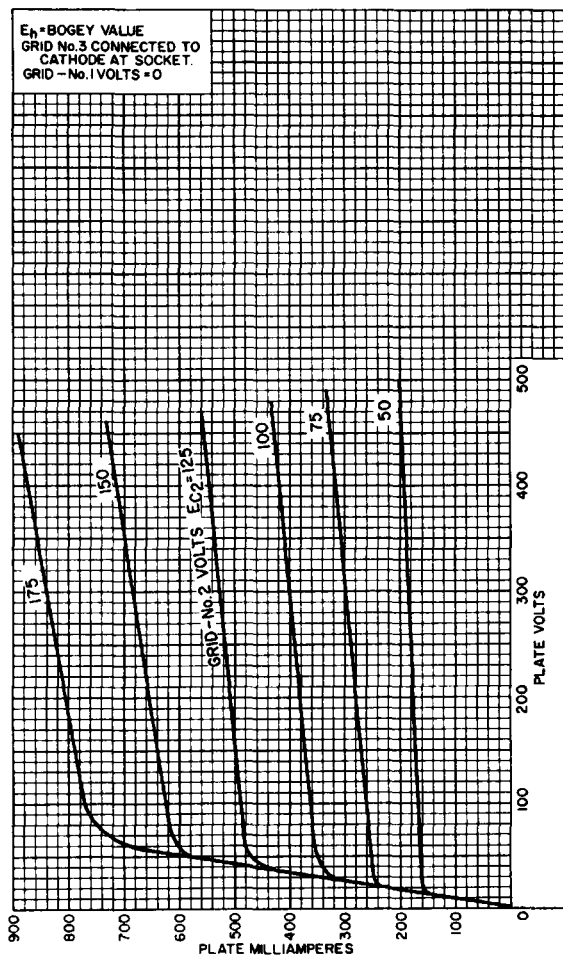
^e In horizontal-deflection-amplifier service, a positive voltage may be applied to grid No.3 to reduce interference from "snivets" which may occur in both vhf and uhf television receivers. A typical operating value for this voltage is 30 V.

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

Typical Characteristics



Typical Plate Characteristics



92CM-12652 R1

