

Beam Power Tube

NOVAR TYPE

DARK HEATER

*For High-Voltage-Pulse Shunt-Regulator
Applications in Color-TV Receivers*

ELECTRICAL CHARACTERISTICS

Bogey Values

Heater Voltage	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

(Triode Connection) ^a	μ	-	4	-	
Plate Resistance (Approx.) . . .	r_p	-	-	6000	Ω
Transconductance	g_m	-	-	9500	μmho
DC Plate Current	I_b	580 ^b	-	80	mA
DC Grid-No.2 Current	I_{c2}	24 ^b	-	2.4	mA
Cutoff DC Grid-No.1 Voltage. .	$E_{c1}(co)$	-	-	-42	V
Plate mA = 1					

Conditions

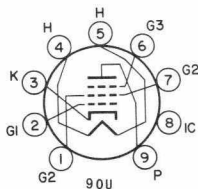
Heater Voltage	E_h	Bogey Value	V
DC Plate Voltage	E_b	100 140	V
DC Grid-No.3 Voltage	E_{c3}	0 0	V
DC Grid-No.2 Voltage	E_{c2}	140 140	V
DC Grid-No.1 Voltage	E_{c1}	0 -24.5	V

MECHANICAL CHARACTERISTICS

Operating Position	Any
Type of Cathode.	Coated Unipotential
Dimensional Outline (JEDEC 12-96).	See <i>General Section</i>
Maximum Overall Length	3.130 in
Maximum Seated Length.	2.750 in
Maximum Diameter	1.562 in
Envelope	JEDEC Designation T12
Base ^c	Large-Button Novar 9-Pin with Exhaust Tip (JEDEC Designation E9-88)

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.3
- Pin 7 -Grid No.2
- Pin 8 -Do Not Use
- Pin 9 -Plate



DESIGN-MAXIMUM RATINGS

For operation as a High-Voltage-Pulse Shunt-Regulator Tube in Color-Television Receivers in a 525-line, 30-frame system

DC Plate Supply Voltage

($I_b = 0$ mA)	E_{bb}	770	V
Peak Positive-Pulse Plate Voltage ^c	e_{bm}	6500	V
Peak Negative-Pulse Plate Voltage.	$-e_{bm}$	1500	V
DC Grid-No.3 Voltage	E_{c3}	75	V
DC Grid-No.2 (Screen-Grid) Voltage	E_{c2}	220	V
Grid No.1 (Control-Grid) Voltage			
Peak negative-pulse value.	$-e_{c1m}$	330	V
Negative dc value (bias)	$-E_{c1}$	75	V

Heater-Cathode Voltage

Peak	e_{hkm}	$\begin{cases} +200 \\ -500 \end{cases}$	V
Average ^d	$E_{hk(av)}$	100	V
Heater Voltage (AC or DC).	E_h	5.7 to 6.9	V

Cathode Current

Peak	i_{km}	950	mA
Average ^d	$I_{k(av)}$	275	mA
Grid-No.2 Input.	P_{g2}	3.5	W
Plate Dissipation ^e	P_b	20 ^f	W
Envelope Temperature (at hottest point on envelope surface).	T_E	240	°C

MAXIMUM CIRCUIT VALUE

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

^a With grid No.3 and grid No.2 connected, respectively, to cathode and 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 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.

^d Measured with a dc meter.

^e Adequate circuit precautions must be taken to protect the tube in the absence of grid-No.1 bias.

^f Plate dissipations up to 24 W maximum are permissible for short periods of time (up to 10 s maximum) provided the maximum envelope-temperature rating is not exceeded.