Beam Power Tube

NOVAR TYPE

For TV Horizontal-Deflection Amplifier Applications

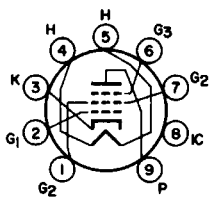
Electrical:

Heater Ratings and Characteristics:		
Voltage (AC or DC)	6.3 ± 0.6	volts
Current at heater volts = 6.3	1.200	amp
Peak heater-cathode voltage:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200[a] max.	volts
Direct Interelectrode Capacitances (Approx.):[b]		
Grid No.1 to plate	0.26	pf
Input: G1 to (K,G3,G2,H)	15.0	pf
Output: P to (K,G3,G2,H)	6.5	pf

Mechanical:

Operating Position	Any
Type of Cathode	Coated Unipotential
Maximum Overall Length	3.180"
Maximum Seated Length	2.800"
Diameter	1.438" to 1.562"
Bulb	T12
Base	Large-Button Novar 9-Pin (JEDEC No.E9-76)
Basing Designation for BOTTOM VIEW	9QU

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

Characteristics, Class A_1 Amplifier:

	Triode Connection[c]			
Plate Voltage	150	60	250	volts
Grid No.3	–	Connected to Cathode at socket		
Grid-No.2 Voltage	150	150	150	volts
Grid-No.1 Voltage	-22.5	0	-22.5	volts
Amplification Factor	4.4	–	–	
Plate Resistance (Approx.)	–	–	15000	ohms
Transconductance	–	–	7100	μmhos
Plate Current	–	390[d]	70	ma
Grid-No.2 Current	–	32[d]	2.1	ma
Grid-No.1 Voltage (Approx.) for plate ma = 1	–	–	-42	volts

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HORIZONTAL-DEFLECTION AMPLIFIER

Maximum Ratings, *Design-Maximum Values:*

	For operation in a 525-line, 30-frame system[e]		
DC Plate Supply Voltage	770	max.	volts
Peak Positive-Pulse Plate Voltage[f]	6500	max.	volts
Peak Negative-Pulse Plate Voltage	1500	max.	volts
DC Grid-No.3 (Suppressor-Grid) Voltage[g]	70	max.	volts
DC Grid-No.2 (Screen-Grid) Voltage	220	max.	volts
DC Grid-No.1 (Control-Grid) Voltage:			
Negative-bias value	55	max.	volts
Peak Negative-Pulse Grid-No.1 Voltage	330	max.	volts
Cathode Current:			
Peak	550	max.	ma
Average	175	max.	ma
Grid-No.2 Input	3.5	max.	watts
Plate Dissipation[h]	17.5	max.	watts
Bulb Temperature (At hottest point on bulb surface)	240	max.	°C

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:			
For grid-resistor-bias operation	1	max.	megohm

[a] The dc component must not exceed 100 volts.

[b] Without external shield.

[c] With grid No.2 connected to plate at socket.

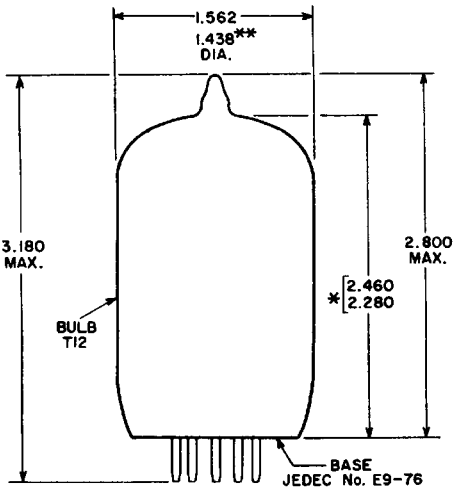
[d] This value can be measured by a method involving a recurrent wave form such that the maximum ratings of the tube will not be exceeded.

[e] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

[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] A positive voltage may be applied to grid No.3 to reduce interference from "snivets" which may occur in television receivers. 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.



* Measured from base seat to bulb-top line as determined by a ring gauge of 0.600" inside diameter.

** The minimum applies in the zone starting 0.375" from the base seat.

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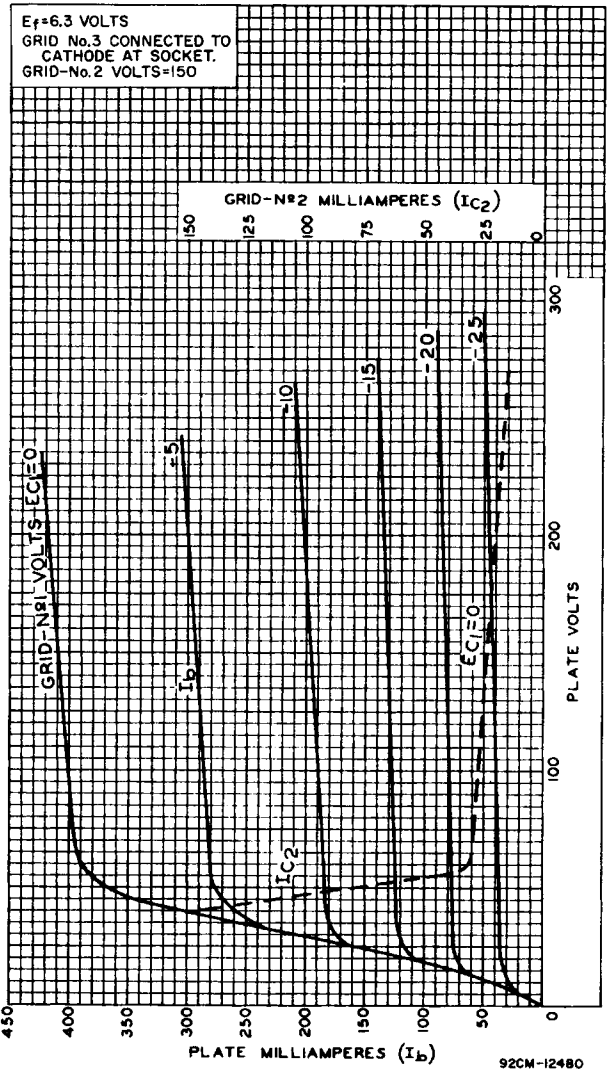
AVERAGE CHARACTERISTICS



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