

Beam Power Tube

NOVAR TYPE

For Horizontal-Deflection-Amplifier
Service in Low-B+ TV Receivers

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:

Current	0.450 ± 0.030	amp
Voltage (AC or DC) at heater amperes = 0.450	22.0	volts
Warm-up time (Average).	11	sec
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.	0.7	pf
Grid No.1 to cathode, grid No.3, grid No.2, and heater	22.0	pf
Plate to cathode, grid No.3, grid No.2, and heater	9.0	pf

Characteristics, Class A₁ Amplifier:

	Triode Connection ^c	Pentode Connection	
Plate Voltage	125	50 130	volts
Grid No.3	Connected	to cathode at socket	
Grid-No.2 Voltage	—	125	125 volts
Grid-No.1 Voltage	-20	0	-20 volts
Amplification Factor.	4.1	—	—
Plate Resistance (Approx.)	—	—	12000 ohms
Transconductance.	—	—	10000 μ mhos
Plate Current	—	525 ^d	80 ma
Grid-No.2 Current	—	32 ^d	2.5 ma
Grid-No.1 Voltage (Approx.) for plate ma. = 1	—	—	-40 volts

Mechanical:

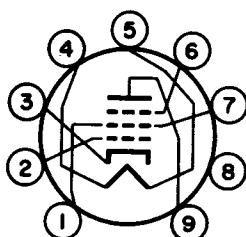
Operating Position.	Any
Type of Cathode	Coated Unipotential
Maximum Overall Length.	3.410"
Maximum Seated Length	3.030"
Length, Base Seat to Bulb Top (Excluding tip)	2.510" to 2.690"
Diameter.	1.438" to 1.562"
Bulb.	T12
Socket.	Cinch Mfg. Co. No.149 19 00 033, Industrial Electronic Hardware Corp. No.S0-0968-SL1, or equivalent



22JG6

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

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 (See <i>Operating Considerations</i>).	75 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	950 max.	ma
Average	275 max.	ma
GRID-No.2 INPUT	3.5 max.	watts
PLATE DISSIPATION ^g	17 max.	watts
BULB TEMPERATURE (At hottest point on bulb surface).	220 max.	°C

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For grid-No.1-resistor-bias

operation 2.2 max. megohms

^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 waveform such that the maximum ratings of the tube will not be exceeded.

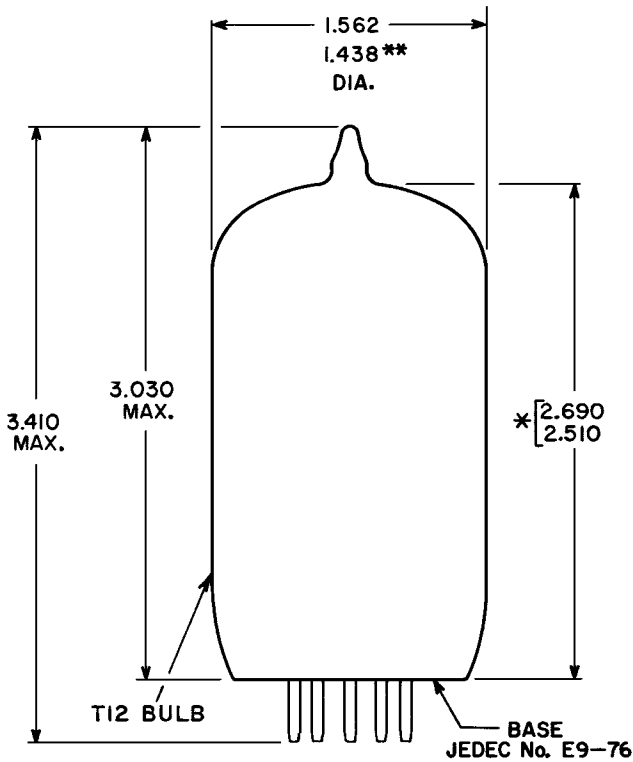
^e As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.

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

OPERATING CONSIDERATIONS

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 value for this voltage is 30 volts.



92CS-11227R3

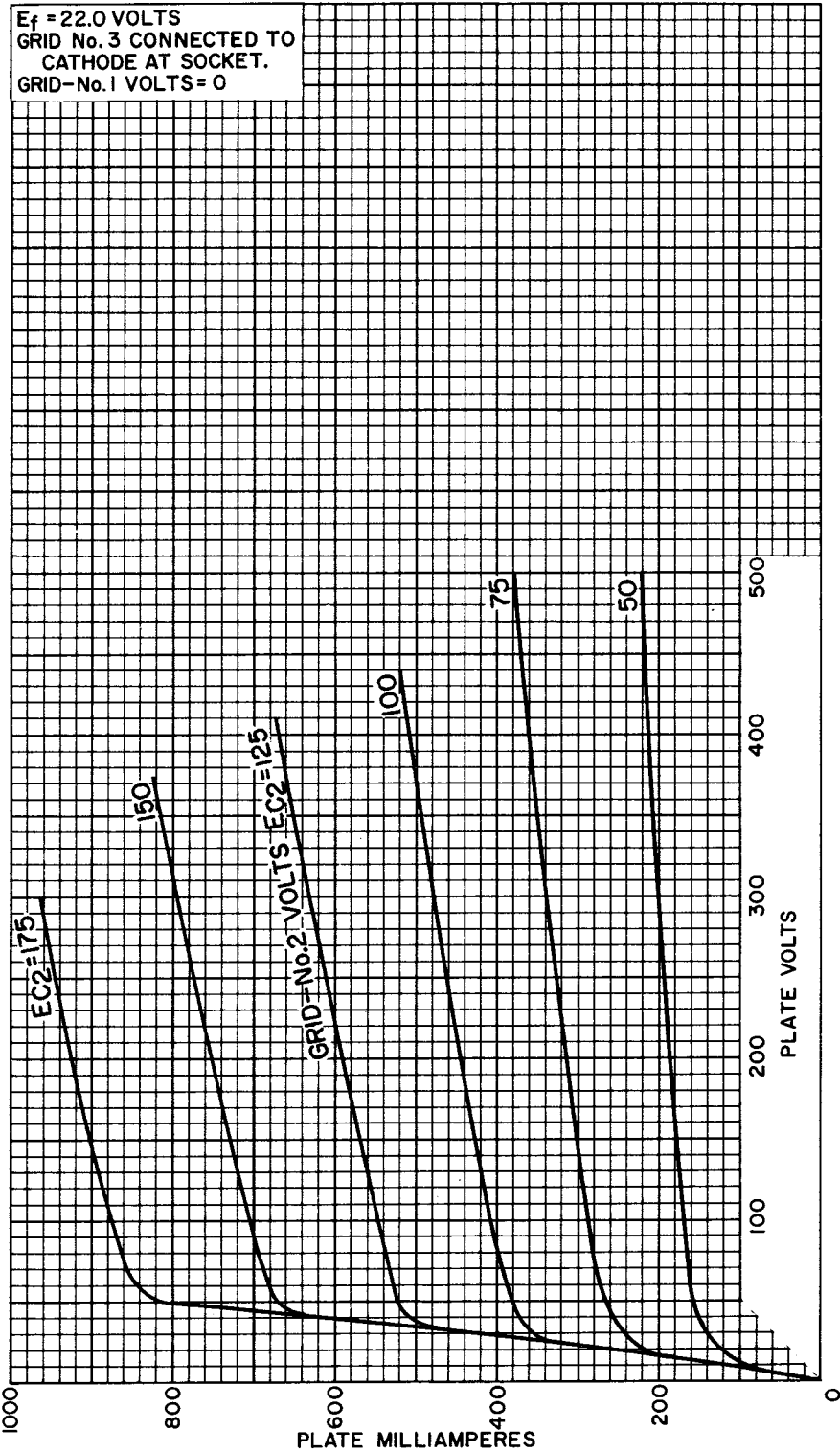
ALL DIMENSIONS IN INCHES.

** APPLIES IN ZONE STARTING 0.375" FROM BASE SEAT.

* MEASURED FROM BASE SEAT TO BULB-TOP LINE AS DETERMINED BY A RING GAUGE OF 0.600" INSIDE DIAMETER.



AVERAGE PLATE CHARACTERISTICS

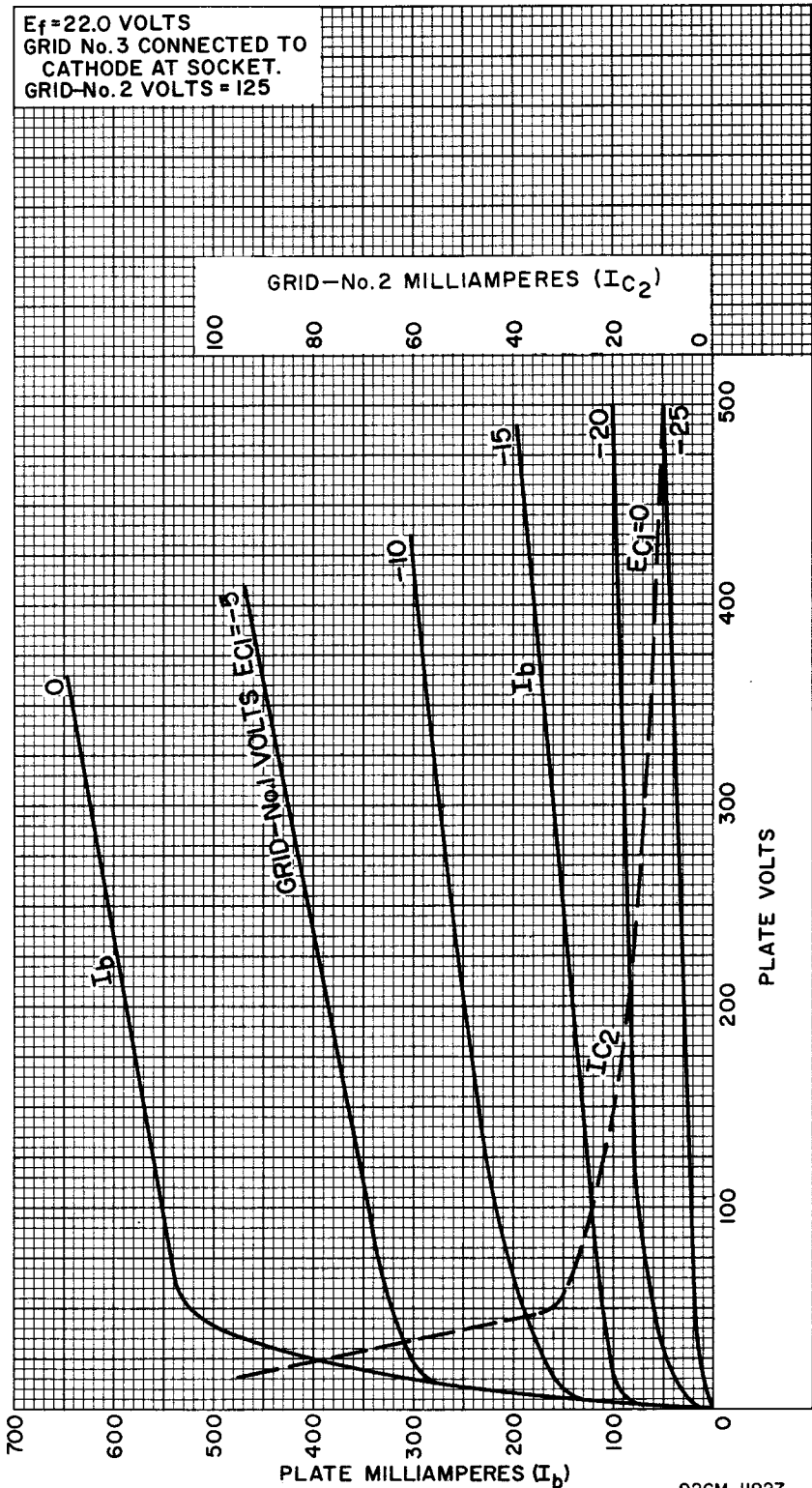


92CM-11923



AVERAGE CHARACTERISTICS

$E_f = 22.0$ VOLTS
GRID No. 3 CONNECTED TO
CATHODE AT SOCKET.
GRID-No. 2 VOLTS = 125



92CM-11927

