

Beam Power Tube

NOVAR TYPE

For TV Horizontal-Deflection Amplifier Applications

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:

Voltage (AC or DC). 6.3 ± 0.6 volts

Current at heater volts = 6.3 1.2 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. 0.2 pf

Grid No.1 to cathode, grid No.3,
grid No.2, and heater 15.0 pfPlate to cathode, grid No.3,
grid No.2, and heater 6.0 pfCharacteristics, Class A₁ Amplifier:

	Triode Connection	Pentode Connection	
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
Mu-factor, Grid No.2 to Grid No.1.	4.4	—	—
Plate Resistance (Approx.).	—	—	15000 ohms
Transconductance.	—	—	7100 μ mhos
Plate Current	—	390 ^c	70 ma
Grid-No.2 Current	—	32 ^c	2.1 ma
Grid-No.2 Voltage (Approx.) for plate current = 1 ma.	—	—	-42 volts

Mechanical:

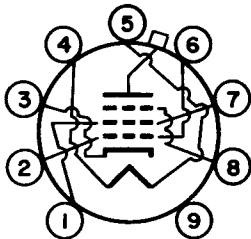
Operating Position.	Any
Type of Cathode	Coated Unipotential
Maximum Overall Length.	3.550"
Seated Length	3.040" $\pm$ 0.130"
Diameter.	1.438" to 1.562"
Bulb.	T12
Cap	Skirted Miniature (JEDEC No.C1-2 or C1-3)
Socket.	Cinch Mfg. Co. No.149 19 00 033, Industrial Electronic Hardware Corp. No.S0-0968-SL1, or equivalent



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Base Large-Button Novar 9-Pin (JEDEC No.E9-76)
Basing Designation for BOTTOM VIEW. 9QL

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
Cap-Plate

HORIZONTAL-DEFLECTION AMPLIFIER

Maximum Ratings, Design-Maximum Values:

For operation in a 525-line, 30-frame system^d

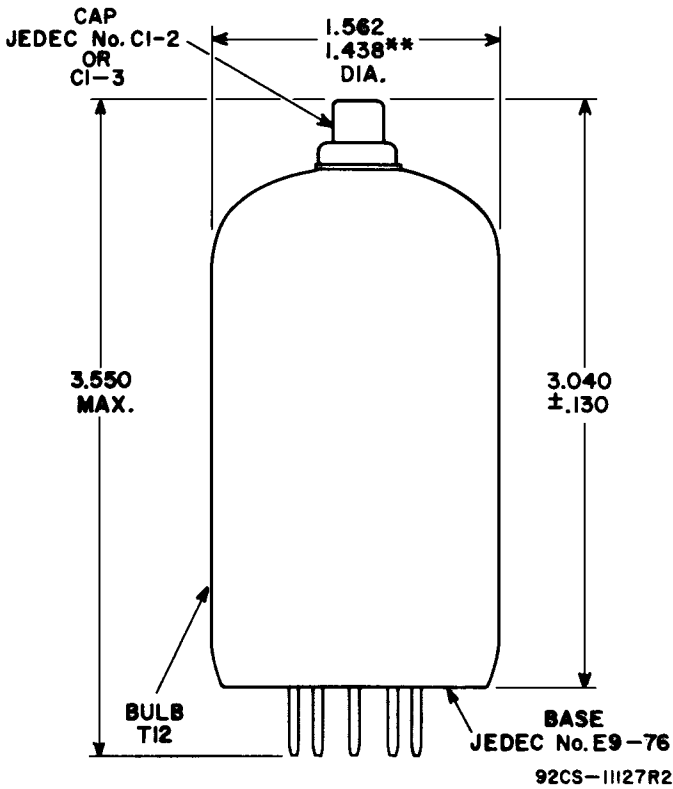
DC PLATE-SUPPLY VOLTAGE		
(Boost + DC Power Supply)	770 max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE ^e . . .	6500 max.	volts
PEAK NEGATIVE-PULSE PLATE VOLTAGE . . .	1500 max.	volts
DC GRID-No.3 VOLTAGE		
(See <i>Operating Considerations</i>).	70 max.	volts
DC GRID-No.2 (SCREEN-GRID) VOLTAGE. . .	220 max.	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE . .	-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 ^f	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^f 1 max. megohm

- ^a The dc component must not exceed 100 volts.
- ^b Without external shield.
- ^c This value can be measured by a method involving a recurrent wave form such that the plate dissipation, grid-No.2 input, and cathode current will be kept within ratings in order to prevent damage to the tube.
- ^d As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.
- ^e 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.
- ^f It is essential that the plate dissipation be limited in the event of loss of grid signal. For this purpose, some protective means such as a cathode resistor of suitable value should be employed.





ALL DIMENSIONS IN INCHES

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

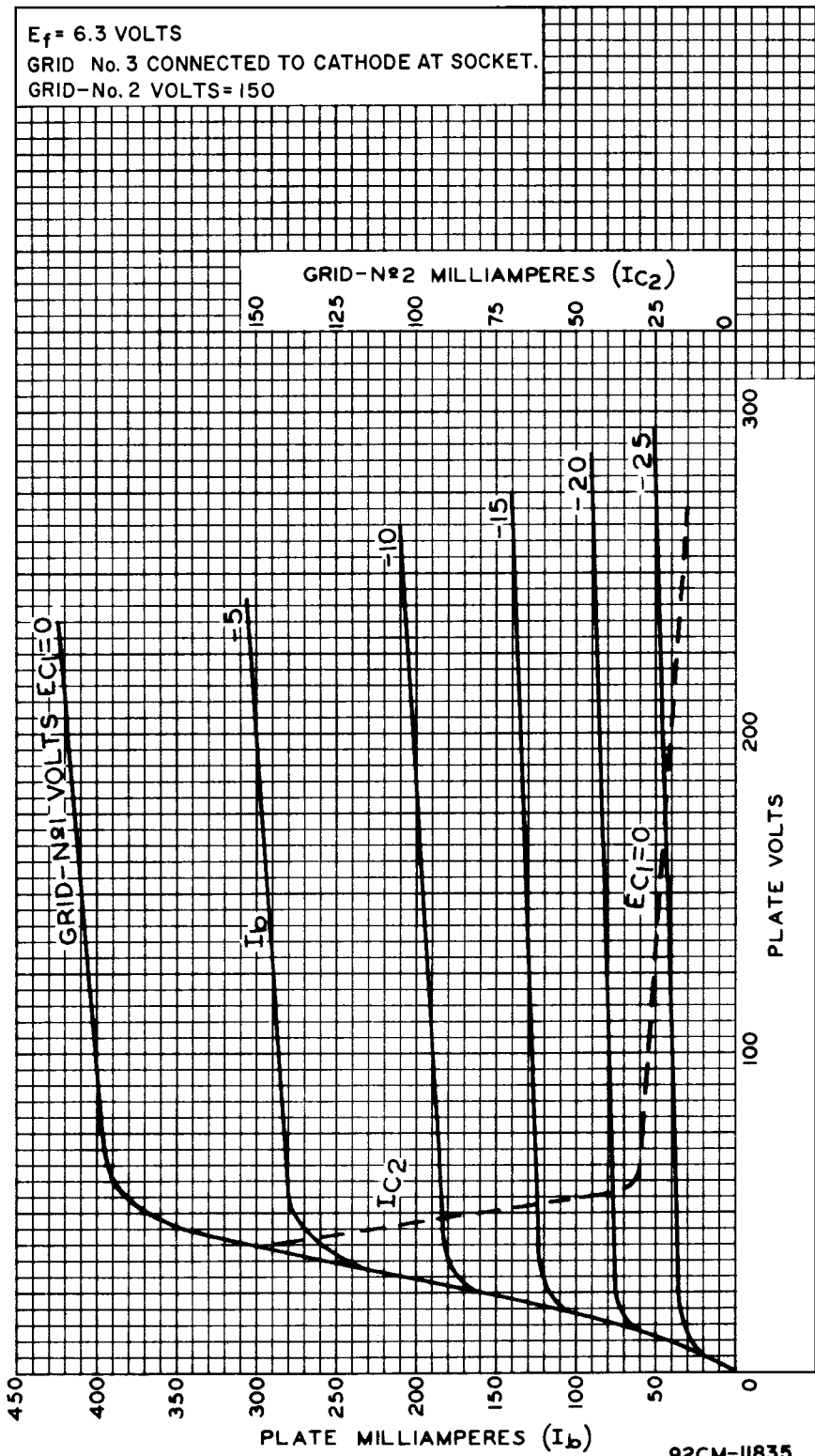
OPERATING CONSIDERATIONS

In *horizontal-deflection amplifier service* a positive voltage may be applied to grid No.3 to minimize "snivets" interference in both vhf and uhf television receivers. A typical value for this voltage is 30 volts.



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AVERAGE CHARACTERISTICS



92CM-11835

