Beam Power Tube

NOVAR TYPE
For Color-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 ........ 2.500 amp
Peak heater-cathode voltage:
Heater negative with
respect to cathode ............. 200 max. volts
Heater positive with
respect to cathode ............. 200* max. volts

Direct Interelectrode Capacitances
(Approx.): b
Grid No.1 to plate .................. 0.44 pf
Grid No.1 to cathode, grid No.3,
gird No.2, and heater .......... 21.0 pf
Plate to cathode, grid No.3,
gird No.2, and heater ......... 11.0 pf

Characteristics, Class A1 Amplifier:

<table>
<thead>
<tr>
<th>Triode Connection</th>
<th>Pentode Connection</th>
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</thead>
<tbody>
<tr>
<td>Plate Voltage ...... 125</td>
<td>70 175 volts</td>
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<tr>
<td>Grid No.3 .......... Connected to cathode at socket</td>
<td></td>
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<tr>
<td>Grid-No.2 Voltage .... 125 125 125 volts</td>
<td></td>
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<tr>
<td>Grid-No.1 Voltage .... -25 0 -25 volts</td>
<td></td>
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<tr>
<td>Amplification Factor... 3.3 - -</td>
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<tr>
<td>Plate Resistance (Approx.)... - - 5500 ohms</td>
<td></td>
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<tr>
<td>Transconductance .... - - 10500 μhos</td>
<td></td>
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<tr>
<td>Plate Current ........ - - 5800 115 ma</td>
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<tr>
<td>Grid-No.2 Current .... - - 40 5 ma</td>
<td></td>
</tr>
<tr>
<td>Grid-No.1 Voltage (Approx.)... for plate ma. = 1. .. - - -55 volts</td>
<td></td>
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Mechanical:
Operating Position .................................. Any
Type of Cathode .................................. Coated Unipotential
Maximum Overall Length .......................... 4.600"
Seat Length .................................. 4.090" ± 0.130"
Diameter .................................. 1.438" to 1.562"
Bulb .................................. T12
Cap .................................. Small (JEDEC No.C1-1)
Socket .................................. Cinch Mfg. Co. No.149 19 00 033,
Industrial Electronic Hardware Corp. No.50-0968-SL1,
or equivalent
6JE6

Base..................Large Button Novar 9-Pin (JEDEC No.E9-76)
Basing Designation for BOTTOM VIEW..................90L

Pin 1-Grid No.2
Pin 2-Grid No.1
Pin 3-Cathode
Pin 4-Heater
Pin 5-Heater

HORIZONTAL-DEFLECTION AMPLIFIER

Maximum Ratings, Design-Maximum Values:

For operation in a 525-line, 30-frame systems

DC PLATE-SUPPLY VOLTAGE ..................990 max. volts
PEAK POSITIVE-PULSE PLATE VOLTAGE.......7000 max. volts
PEAK NEGATIVE-PULSE PLATE VOLTAGE ......1100 max. volts
DC GRID-No.3 VOLTAGE
(See Operating Considerations) ............75 max. volts
DC GRID-No.2 (SCREEN-GRID) VOLTAGE ...190 max. volts
PEAK NEGATIVE-PULSE GRID-No.1
(CONTROL-GRID) VOLTAGE ................250 max. volts
CATHODE CURRENT:
Peak ......................................1100 max. ma
Average ..................................315 max. ma
GRID-No.2 INPUT ..........................3.2 max. watts
PLATE DISSIPATIONf ........................24 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 operationf ........0.47 max. megohm
For plate-pulsed operation (horizontal-deflection circuits only) 10 max. megohms

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 which may occur in both uhf and vhf television receivers. A typical value for this voltage is 30 volts.
AVERAGE CHARACTERISTICS

$E_f = 6.3$ VOLTS
GRID No. 3 CONNECTED TO CATHODE AT SOCKET.
GRID No. 1 VOLTS = 0

PLATE ($I_b$) OR GRID No. 2 ($I_c$) MILLIAMPERES

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AVERAGE CHARACTERISTICS

$E_1 = 6.3$ VOLTS
GRID No. 3 CONNECTED TO CATHODE AT SOCKET.
GRID = No.2 VOLTS = 125

PLATE ($I_B$) OR GRID = No.2 ($I_C$) MILLIAMPERES

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