Beam Power Tube

DUODECAR TYPE

Electrical:

Heater Ratings and Characteristics:
Voltage (AC or DC) .................. 6.3 ± 0.6 volts
Current at heater volts = 6.3 ........ 2.250 amp
Peak heater-cathode voltage:
Heater negative with respect to cathode .................. 200 max. volts
Heater positive with respect to cathode .................. 200ª max. volts

Mechanical:

Operating Position .................. Any
Type of Cathode .................. Coated Unipotential
Maximum Overall Length .................. 3.625"
Seated Length .................. 3.000" to 3.250"
Diameter .................. 1.437" to 1.563"
Dimensional Outline .................. See General Section
Bulb .................. T12
Base .................. Large-Button Duodecar 12-Pin (JEDEC No.E12-74)
Basing Designation for BOTTOM VIEW .................. 12FL

Characteristics, Class A1 Amplifier:

Plate Voltage .................. 40 60 135 135 volts
Grid-No.3 Voltage .................. Connected to cathode at socket 0 0 volts
Grid-No.2 Voltage .................. 110 135 135 135 volts
Grid-No.1 Voltage .................. 0 0 -22 -22 volts
Amplification Factor .................. - - 4.2
Plate Resistance (Approx.) .................. - - 5000 - ohms
Transconductance .................. - - 10000 - µmhos
Plate Current .................. 400º 540º 80 - ma
Grid-No.2 Current .................. 42º 40º 5.5 - ma
Grid-No.1 Voltage (Approx.) for plate ma = 1, grid-No.2
volts = 135, plate volts = 4500 ... - - - 70 - volts
# HORIZONTAL-DEFLECTION AMPLIFIER

## Maximum Ratings, Design-Maximum Values:

For operation in a 525-line, 30-frame system:

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Plate Supply Voltage</td>
<td>770 max. volts</td>
</tr>
<tr>
<td>Peak Positive-Pulse Plate Voltage</td>
<td>7000 max. volts</td>
</tr>
<tr>
<td>Peak Negative-Pulse Plate Voltage</td>
<td>1500 max. volts</td>
</tr>
<tr>
<td>DC Grid-No. 3 (Suppressor-Grid) Voltage</td>
<td>70 max. volts</td>
</tr>
<tr>
<td>DC Grid-No. 2 (Screen-Grid) Voltage</td>
<td>220 max. volts</td>
</tr>
<tr>
<td>Peak Negative-Pulse Grid-No. 1 Voltage</td>
<td>330 max. volts</td>
</tr>
<tr>
<td>Cathode Current:</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>1000 max. ma</td>
</tr>
<tr>
<td>Average</td>
<td>280 max. ma</td>
</tr>
<tr>
<td>Grid-No. 2 Input</td>
<td>6 max. watts</td>
</tr>
<tr>
<td>Grid-No. 2 Input (warm-up surge)</td>
<td>12 max. watts</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>24 max. watts</td>
</tr>
<tr>
<td>Bulb Temperature (At hottest point on bulb surface)</td>
<td>240 max. °C</td>
</tr>
</tbody>
</table>

## Maximum Circuit Values:

Grid-No. 1 Circuit Resistance: 1 max. megohm

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*a* The dc component must not exceed 100 volts.

*b* With grid No. 2 connected to plate at socket.

*c* Instantaneous values.

*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* 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.

*g* Surge not to exceed 15 second duration.

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