Medium-Mu Dual Triode

**DUODECAR TYPE**

**GENERAL DATA**

**Electrical:**

Heater Characteristics and Ratings (*Design-Maximum Values*):
- Voltage (AC or DC) ............ 6.3 ± 0.6 volts
- Current at heater volts = 6.3 .... 0.900 amp
- Peak heater-cathode voltage (Each unit):
  - Heater negative with respect to cathode ........ 200 max. volts
  - Heater positive with respect to cathode ....... 200 max. volts

Direct Interelectrode Capacitances (Approx.):

<table>
<thead>
<tr>
<th>Unit No. 1</th>
<th>Unit No. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid to plate</td>
<td>3.8</td>
</tr>
<tr>
<td>Grid to cathode and heater</td>
<td>2.2</td>
</tr>
<tr>
<td>Plate to cathode and heater</td>
<td>0.48</td>
</tr>
</tbody>
</table>

**Characteristics, Class A Amplifier:**

<table>
<thead>
<tr>
<th>Unit No. 1</th>
<th>Unit No. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250</td>
</tr>
<tr>
<td>Grid Voltage</td>
<td>-8</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>22.5</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>9000</td>
</tr>
<tr>
<td>Transconductance</td>
<td>2500</td>
</tr>
<tr>
<td>Plate Current</td>
<td>8</td>
</tr>
</tbody>
</table>
| Grid Voltage (Approx.)
  - for plate µa = 10 | -18 | - | - |
| Grid Voltage (Approx.)
  - for plate µa = 50 | - | - | -23 volts |

**Mechanical:**

- Operating Position: Any
- Type of Cathodes: Coated Unipotential
- Maximum Overall Length: 2.375”
- Seated Length: 1.750” to 2.000”
- Diameter: 1.062” to 1.186”
- Bulb: T9
- Base: Small-Button Duodecar 12-Pin (JEDEC No.E12-70)
- Basing Designation for BOTTOM VIEW: 12BM

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>Heater</td>
</tr>
<tr>
<td>9/2</td>
<td>Same as Pin 2</td>
</tr>
<tr>
<td>10/3</td>
<td>Grid of Unit No.2</td>
</tr>
<tr>
<td>11/4</td>
<td>Same as Pin 2</td>
</tr>
<tr>
<td>12/5</td>
<td>Plate of Unit No.2</td>
</tr>
<tr>
<td>1/6</td>
<td>Do Not Use</td>
</tr>
<tr>
<td>2/7</td>
<td>Cathode of Unit No.2</td>
</tr>
</tbody>
</table>
VERTICAL-DEFLECTION OSCILLATOR

Values are for Unit No.1

Maximum Ratings, Design-Maximum Values:

DC PLATE VOLTAGE .................. 350 max. volts
PEAK NEGATIVE-PULSE GRID VOLTAGE .... 400 max. volts
PLATE DISSIPATION .................. 1 max. watt

Maximum Circuit Values:

Grid-Circuit Resistance:
  For fixed-bias or cathode-bias operation .......... 2.2 max. megohms

VERTICAL-DEFLECTION AMPLIFIER

Values are for Unit No.2

Maximum Ratings, Design-Maximum Values:

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

DC PLATE VOLTAGE .................. 550 max. volts
PEAK POSITIVE-PULSE PLATE VOLTAGE* .... 2500 max. volts
PEAK NEGATIVE-PULSE GRID VOLTAGE .... 250 max. volts

CATHODE CURRENT:
  Peak ................................ 150 max. ma
  Average ................................ 50 max. ma
PLATE DISSIPATION .................. 10 max. watts

Maximum Circuit Values:

Grid-Circuit Resistance:
  For fixed-bias operation .......... 2.2 max. megohms

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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 maximum ratings of the tube will not be exceeded.
d As described in “Standards of Good Engineering Practice Concerning Television Broadcast Stations,” Federal Communications Commission.
e This rating is applicable when the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.
* APPLIES TO MINIMUM DIAMETER EXCEPT IN AREA OF SEAL.