Dual Triode
With High-Mu Unit and Low-Mu Unit
DUODECAR TYPE

Electrical:
Heater Characteristics and Ratings:
Voltage (AC or DC) .......... 6.3 ± 0.6 volts
Current at 6.3 volts .......... 1.050 amp
Maximum heater-cathode voltage (Each unit):
Heater negative with respect to cathode:
Peak .......... 200 volts
Heater positive with respect to cathode:
Peak .......... 200 volts
DC component .......... 100 volts
Direct Interelectrode Capacitances (Approx.):
\[\text{Unit No. 1} \quad \text{Unit No. 2}\]
Grid to plate .......... 4.4 \quad 9.5 \text{ pf}
Input: G to (K, H) .......... 2.2 \quad 6.5 \text{ pf}
Output: P to (K, H) .......... 0.4 \quad 1.2 \text{ pf}

Mechanical:
Operating Position .......... Any
Type of Cathodes .......... Coated Unipotential
Maximum Overall Length .......... 2.875"
Seated Length .......... 2.250" to 2.500"
Diameter .......... 1.062" to 1.188"
Dimensional Outline (JEDEC 9-60) .......... See General Section
Bulb .......... Small-Button Duodecar 12-Pin (JEDEC No.E12-70)
Basing Designation for BOTTOM VIEW .......... 12E0

Pin 1—Heater
Pin 2—No Internal Connection
Pin 3—Grid of Unit No.2
Pin 4—No Internal Connection
Pin 5—Plate of Unit No.2
Pin 6—No Internal Connection
Pin 7—Cathode of Unit No.2
Pin 8—Do Not Use
Pin 9—Cathode of Unit No.1
Pin 10—Grid of Unit No.1
Pin 11—Plate of Unit No.1
Pin 12—Heater

Characteristics, Class A1 Amplifier:
\[\text{Unit No. 1} \quad \text{Unit No. 2}\]
Plate Voltage .......... 250 \quad 60 \quad 150 \text{ volts}
Grid Voltage .......... \(-3\) \quad \(0^b\) \quad \(-17.5 \text{ volts}\)
Amplification Factor .......... 65 \quad 6
Plate Resistance (Approx.) .......... 40500 \quad 920 \text{ ohms}
Transconductance .......... 1600 \quad 6500 \mu\text{hos}
Plate Current .......... 1.4 \quad 95 \quad 35 \text{ ma}
Plate Current for grid volts = \(-25\) .......... 5 \quad 6 \text{ ma}
Grid-Voltage for plate \(\mu\text{a} = 30\) .......... \(-5.5\) \quad -- \quad \text{ volts}
Grid-Voltage for plate \(\mu\text{a} = 50\) .......... \(--\) \quad -- \quad \(-36 \text{ volts}\)
VERTICAL DEFLECTION OSCILLATOR AND AMPLIFIER

Maximum Ratings, Design-Maximum Values:

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

<table>
<thead>
<tr>
<th></th>
<th>Unit No.1 (Oscillator)</th>
<th>Unit No.2 (Amplifier)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Plate Voltage</td>
<td>330</td>
<td>275</td>
</tr>
<tr>
<td>Peak Positive-Pulse Plate Voltage</td>
<td>-</td>
<td>2000</td>
</tr>
<tr>
<td>Peak Negative Pulse-Grid Voltage</td>
<td>400</td>
<td>250</td>
</tr>
<tr>
<td>Cathode Current:</td>
<td></td>
<td></td>
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<tr>
<td>Peak</td>
<td>70</td>
<td>175</td>
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<tr>
<td>Average</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>Plate Dissipation:</td>
<td>1</td>
<td>7d</td>
</tr>
</tbody>
</table>

Maximum Circuit Values:

Grid-Circuit Resistance... 2.2  2.2 megohms

a Without external shield.
b Applied for short interval (2 seconds maximum) so as not to damage tube.
c This rating is applicable where 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 milli-seconds.
d An adequate bias resistor or other means is required to protect the tube in the absence of excitation.