23Z9

DUAL TRIODE—BEAM POWER TUBE

Duodecar type used in combined vertical-deflection-oscillator and vertical-deflection-amplifier applications in television receivers. Outlines section, 8B; requires duodecar 12-contact socket. Heater: volts (ac/dc), 23; amperes, 0.45; average warm-up time, 11 seconds; maximum heater-cathode volts, ±200 peak, 100 average.

Class A1 Amplifier

CHARACTERISTICS

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>Triode Unit No.1</th>
<th>Triode Unit No.2</th>
<th>Beam Power Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>150</td>
<td>150</td>
<td>45</td>
</tr>
<tr>
<td>Grid-No.2 (Screen-Grid) Voltage</td>
<td>—</td>
<td>—</td>
<td>110</td>
</tr>
<tr>
<td>Grid-No.1 (Control-Grid) Voltage</td>
<td>—2</td>
<td>—5</td>
<td>9</td>
</tr>
<tr>
<td>Amplification Factor</td>
<td>43</td>
<td>20</td>
<td>—</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>11000</td>
<td>8500</td>
<td>—</td>
</tr>
<tr>
<td>Transconductance</td>
<td>3900</td>
<td>2350</td>
<td>—</td>
</tr>
<tr>
<td>Plate Current</td>
<td>5.4</td>
<td>5.5</td>
<td>122</td>
</tr>
<tr>
<td>Grid-No.2 Current</td>
<td>—</td>
<td>—</td>
<td>16.5</td>
</tr>
<tr>
<td>Grid-No.1 Voltage (Approx.) for plate current of 100 µA</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Grid Voltage (Approx.) for plate current of 10 µA</td>
<td>—5.7</td>
<td>—11</td>
<td>—</td>
</tr>
</tbody>
</table>

Vertical-Deflection Oscillator and Amplifier

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

MAXIMUM RATINGS (Design-Maximum Values)

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>Triode Unit No.1 Amplifier</th>
<th>Triode Unit No.2 Oscillator</th>
<th>Beam Power Unit Amplifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>350</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Peak Positive-Pulse Plate Voltage</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Peak Negative-Pulse Grid-No.1 Voltage</td>
<td>—</td>
<td>—</td>
<td>400</td>
</tr>
<tr>
<td>Grid Voltage, Positive-bias value</td>
<td>0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Plate Dissipation</td>
<td>125</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Grid-No.2 Input</td>
<td>—</td>
<td>—</td>
<td>1.8</td>
</tr>
<tr>
<td>Peak Cathode Current</td>
<td>—</td>
<td>—</td>
<td>245</td>
</tr>
<tr>
<td>Average Cathode Current</td>
<td>—</td>
<td>—</td>
<td>70</td>
</tr>
<tr>
<td>Peak Plate Current</td>
<td>—</td>
<td>—</td>
<td>29</td>
</tr>
<tr>
<td>Average Plate Current</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:

For fixed-bias operation: 0.5 1 1 megohm

# Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).

24A Refer to chart at end of section.

24BF11 Refer to type 6BF11.

24JE6A Refer to chart at end of section.

24JE6C For replacement use type 24LQ6/24JE6C.

24JZ8 Refer to type 6JZ8.
For replacement use type 24LQ6/24JE6C.

Refer to type 6MJ6/6LQ6/6JE6C.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to type 6AV5GA.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to type 6BQ6GTB/6CU6.

Refer to type 50C5.

Refer to chart at end of section.

Refer to chart at end of section.

For replacement use type 25C5.

Refer to chart at end of section.

Refer to type 6CD6GA.

Refer to type 6CG3.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to type 12CT3.

Refer to type 6BQ6GTB/6CU6.

Refer to type 6DL3.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to chart at end of section.

Refer to type 25E5/PL36.

Refer to type 6EH5.

Refer to chart at end of section.

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Refer to type 6JZ8.

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