Beam Power Tube

With Heater Having Controlled Warm-Up Time

**GENERAL DATA**

**Electrical:**
Heater, for Unipotential Cathodes:
- Voltage (AC or DC) ......... 6.3 volts
- Current .................. 0.45 ± 6% amp
- Warm-up time (Average) .... 11 sec

**Direct Interelectrode Capacitances (Approx.)**
- Grid-No.1 to plate ........... 0.7 µµf
- Grid-No.1 to cathode & grid No.3, grid No.2, and heater .... 9 µµf
- Plate to cathode & grid No.3, grid No.2, and heater .... 7.5 µµf

**Characteristics, Class A1 Amplifier:**

<table>
<thead>
<tr>
<th>Triode Connection</th>
<th>Plate Voltage</th>
<th>Grid-No.2 Voltage</th>
<th>Grid-No.1 Voltage</th>
<th>Amplification Factor</th>
<th>Plate Resistance (Approx.)</th>
<th>Transconductance</th>
<th>Plate Current</th>
<th>Grid-No.2 Current</th>
<th>Grid-No.1 Voltage (Approx.) for plate ma. = 0.5</th>
<th>-36 volts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>250 volts</td>
<td>250 volts</td>
<td>-250 volts</td>
<td>9.8</td>
<td>50000 ohms</td>
<td>4100 µµhos</td>
<td>45 ma</td>
<td>4.5 ma</td>
<td>-36 volts</td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical:**

- Operating Position: Any
- Maximum Overall Length: 3-5/16"
- Maximum Seated Length: 2-3/4"
- Maximum Diameter: 1-9/32"
- Dimensional Outline: See General Section
- Bulb: T9
- Bases (Alternates):
  - Intermediate-Shell Octal: 7-Pin, Arrangement 1, (JEDEC Group 1, No.87-7)
  - 6-Pin, Arrangement 2, (JEDEC Group 1, No.86-81)
  - Short Intermediate-Shell Octal with External Barriers: 7-Pin, (JEDEC Group 1, No.87-59)
  - 6-Pin, Arrangement 2, (JEDEC Group 1, No.86-84)
6V6GTA

Basing Designation for BOTTOM VIEW. ................ 7AC

Pin 1c-No Connection
Pin 2-Heater
Pin 3-Plate
Pin 4-Grid No.2
Pin 5-Grid No.1
Pin 7-Heater
Pin 8-Cathode, Grid No.3

AF POWER AMPLIFIER — Class A

Maximum Ratings, Design-Maximum Values:
- Plate Voltage .................................. 350 max. volts
- Grid-No.2 (Screen-Grid) Voltage .............. 315 max. volts
- Grid-No.2 Input .................................. 2.2 max. watts
- Plate Dissipation .................................. 14 max. watts
- Peak Heater-Cathode Voltage:
  - Heater negative with respect to cathode. 200 max. volts
  - Heater positive with respect to cathode. 200d max. volts

Typical Operation and Characteristics:
- Plate Voltage .................................. 180 250 315 volts
- Grid-No.2 Voltage ................................. 180 250 225 volts
- Grid-No.1 (Control-Grid) Voltage .......... -8.5 -12.5 -13 volts
- Peak AF Grid-No.1 Voltage .................. 8.5 12.5 13 volts
- Zero-Signal Plate Current ..................... 29 45 34 ma
- Max.-Signal Plate Current .................... 50 47 35 ma
- Zero-Signal Grid-No.2 Current .............. 3 4.5 2.2 ma
- Max.-Signal Grid-No.2 Current .............. 4 7 6 ma
- Plate Resistance (Approx.) ................. 50000 50000 80000 ohms
- Transconductance .................................. 3700 4100 3750 µmhos
- Load Resistance .................................. 3500 5000 8500 ohms
- Total Harmonic Distortion ................. 8 8 12 %
- Max.-Signal Power Output .................. 2 4.5 5.5 watts

Maximum Circuit Values:
- Grid-No.1-Circuit Resistance:
  - For fixed-bias operation. ................. 0.1 max. megohm
  - For cathode-bias operation. ............ 0.5 max. megohm

PUSH-PULL AF POWER AMPLIFIER — Class A

Maximum Ratings, Design-Maximum Values:
- Plate Voltage .................................. 350 max. volts
- Grid-No.2 (Screen-Grid) Voltage .............. 315 max. volts
- Grid-No.2 Input .................................. 2.2 max. watts
- Plate Dissipation .................................. 14 max. watts
- Peak Heater-Cathode Voltage:
  - Heater negative with respect to cathode. 200 max. volts
  - Heater positive with respect to cathode. 200d max. volts

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Electron Tube Division
Harrison, N. J.
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Typical Operation and Characteristics:

Values are for two tubes

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>250</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>250</td>
</tr>
<tr>
<td>Grid-No.1 (Control-Grid) Voltage</td>
<td>-15</td>
</tr>
<tr>
<td>Grid-No.1 (Control-Grid) Voltage</td>
<td>-19</td>
</tr>
<tr>
<td>Peak AF Grid-No.1-to-Grid-No.1 Voltage</td>
<td>30</td>
</tr>
<tr>
<td>Zero-Signal Plate Current</td>
<td>70</td>
</tr>
<tr>
<td>Max.-Signal Plate Current</td>
<td>79</td>
</tr>
<tr>
<td>Zero-Signal Grid-No.2 Current</td>
<td>5</td>
</tr>
<tr>
<td>Max.-Signal Grid-No.2 Current</td>
<td>13</td>
</tr>
<tr>
<td>Effective Load Resistance</td>
<td>10000</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>5</td>
</tr>
<tr>
<td>Maximum-Signal Power Output</td>
<td>10</td>
</tr>
<tr>
<td>Maximum Circuit Values:</td>
<td></td>
</tr>
<tr>
<td>Grid-No.1-Circuit Resistance</td>
<td></td>
</tr>
<tr>
<td>For fixed-bias operation</td>
<td>0.1</td>
</tr>
<tr>
<td>For cathode-bias operation</td>
<td>0.5</td>
</tr>
<tr>
<td>VERTICAL-DEFLECTION AMPLIFIER</td>
<td></td>
</tr>
</tbody>
</table>

Triode Connection — Grid No.2 Connected to Plate

Maximum Ratings, Design-Maximum Values:

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC PLATE VOLTAGE</td>
<td>350</td>
</tr>
<tr>
<td>PEAK POSITIVE-PULSE PLATE VOLTAGE</td>
<td>1200</td>
</tr>
<tr>
<td>PEAK NEGATIVE-PULSE GRID-No.1</td>
<td></td>
</tr>
<tr>
<td>(CONTROL-GRID) VOLTAGE</td>
<td>275</td>
</tr>
<tr>
<td>CATHODE CURRENT:</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>115</td>
</tr>
<tr>
<td>Average</td>
<td>40</td>
</tr>
<tr>
<td>PLATE DISSIPATION</td>
<td>10</td>
</tr>
<tr>
<td>PEAK HEATER-CATHODE VOLTAGE</td>
<td></td>
</tr>
<tr>
<td>Heater negative with respect to cathode</td>
<td>200</td>
</tr>
<tr>
<td>Heater positive with respect to cathode</td>
<td>200</td>
</tr>
</tbody>
</table>

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For cathode-bias operation                      |

a Without external shield.

b Grid No.2 connected to plate.

c On the 6-pin bases, pin 1 as well as pin 6 is omitted.

d The DC component must not exceed 100 volts.

e As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.

f 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.
OPERATION CHARACTERISTICS

$E_T = 6.3 \text{ VOLTS}$

$\text{PLATE VOLTS} = 250$

$\text{GRID - N\#2 VOLTS} = 250$

$\text{GRID - N\#1 VOLTS} = 12.5$

$\text{SIGNAL VOLTS (RMS)} = 8.8$

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**Graph:**

- **Y-axis:**
  - Power Output (Watts)
  - Total Harmonic Distortion (Per Cent)
  - Grid-N\#2 Current

- **X-axis:** Effective Load Resistance (Ohms)

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92CM-6339R2

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