**BEAM POWER AMPLIFIER**

**MINIATURE TYPE**

**GENERAL DATA**

**Electrical:**
- Heater, for Unipotential Cathode:
  - Voltage: 12.6 ac or dc volts
  - Current: 0.225 amp
- Direct Intelectrode Capacitances
  - Grid No.1 to Plate: 0.35 \(\mu\)f
  - Input: 8.3 \(\mu\)f
  - Output: 8.2 \(\mu\)f

**Mechanical:**
- Mounting Position: Any
- Maximum Overall Length: 2-5/8"
- Maximum Seated Length: 2-3/8"
- Length, Base Seat to Bulb Top (Excluding Tip): 2" ± 3/32"
- Maximum Diameter: 3/4"
- Bulb: T-5-1/2
- Base: Small-Button Miniature 7-Pin (JETEC No.E7-1)

**BOTTOM VIEW**

- Pin 1 - Grid No.1
- Pin 2 - Grid No.3, Cathode
- Pin 3 - Heater
- Pin 4 - Heater
- Pin 5 - Plate
- Pin 6 - Grid No.2
- Pin 7 - Grid No.1

**AF POWER AMPLIFIER - Class A**

**Maximum Ratings, Design-Center Values:**
- PLATE VOLTAGE: 250 max. volts
- GRID-No.2 (SCREEN) VOLTAGE: 250 max. volts
- PLATE DISSIPATION: 12 max. watts
- GRID-No.2 INPUT: 2 max. watts

**PEAK HEATER-CATHODE VOLTAGE:**
- Heater negative with respect to cathode: 90 max. volts
- Heater positive with respect to cathode: 90 max. volts

**BULB TEMPERATURE (At hottest point on bulb surface):** 250 max. °C

**Typical Operation and Characteristics:**
- Plate Voltage: 180 250 volts
- Grid-No.2 Voltage: 180 250 volts
- Grid-No.1 (Control-Grid) Voltage: -8.5 -12.5 volts
- Peak AF Grid-No.1 Voltage: 8.5 12.5 volts
- Zero-Signal Plate Current: 29 45 ma
- Max.-Signal Plate Current: 30 47 ma

*See next page.*

**AUG.1, 1953**

**TUBE DEPARTMENT**

**TENTATIVE DATA 1**

**RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY**
**BEAM POWER AMPLIFIER**

<table>
<thead>
<tr>
<th>Zero-Signal Grid-No.2 Current (Approx.)</th>
<th>3</th>
<th>4.5 ma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max.-Signal Grid-No.2 Current (Approx.)</td>
<td>4</td>
<td>7 ma</td>
</tr>
<tr>
<td>Plate Resistance (Approx.)</td>
<td>58000</td>
<td>52000 ohms</td>
</tr>
<tr>
<td>Transconductance</td>
<td>3700</td>
<td>4100 µmhos</td>
</tr>
<tr>
<td>Load Resistance</td>
<td>5500</td>
<td>5000 ohms</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>8</td>
<td>8 per cent</td>
</tr>
<tr>
<td>Max.-Signal Power Output</td>
<td>2.0</td>
<td>4.5 watts</td>
</tr>
</tbody>
</table>

**Maximum Circuit Values:**

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

**AF POWER AMPLIFIER - Class AB1**

**Maximum Ratings, Design-Center Values:**

- **PLATE VOLTAGE**: 250 max. volts
- **GRID-No.2 (SCREEN) VOLTAGE**: 250 max. volts
- **PLATE DISSIPATION**: 12 max. watts
- **GRID-No.2 INPUT**: 2 max. watts
- **PEAK HEATER-CATHODE VOLTAGE**:
  - Heater negative with respect to cathode: 90 max. volts
  - Heater positive with respect to cathode: 90 max. volts
- **BULB TEMPERATURE (At hottest point on bulb surface)**: 250 max. °C

**Typical Operation:**

*Unless otherwise indicated, values are for 2 tubes*

- Plate Voltage: 250 volts
- Grid-No.2 Voltage: 250 volts
- Grid-No.1 (Control-Grid) Voltage#: -15 volts
- Peak AF Grid-No.1-to-Grid-No.1 Voltage: 30 volts
- Zero-Signal Plate Current: 70 ma
- Max.-Signal Plate Current: 79 ma
- Zero-Signal Grid-No.2 Current (Approx.): 5 ma
- Max.-Signal Grid-No.2 Current (Approx.): 13 ma
- Plate Resistance (Approx. per tube): 60000 ohms
- Transconductance (Per tube): 3750 µmhos
- Effective Load Resistance (Plate to plate): 10000 ohms
- Total Harmonic Distortion: 5 per cent
- Max.-Signal Power Output: 10 watts

*High ambient temperature and shielding may necessitate a reduction in operating dissipation. When tube shields are used, it is advisable to paint the inside and outside surfaces of the tube shield a dull black and to provide ventilation slots to reduce operating temperature.*

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*AUG. 1, 1953 TUBE DEPARTMENT RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY*
Maximum Circuit Values Per Tube:

Grid-No.1-Circuit Resistance:

- For fixed bias ................. 0.1 max. megohm
- For cathode bias ............... 0.5 max. megohm

* The type of input coupling used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.

* If the grid-No.1-circuit resistance is common to two tubes, the indicated maximum values per tube should be halved.

Curves shown under Type 6V6 also apply to 12AQ5