BEAM POWER TUBE
9-PIN MINIATURE TYPE
For af or rf power-amplifier applications at frequencies up to 160 Mc

GENERAL DATA

Electrical:
Heater, for Unipotential Cathode:
Voltage: 6.3 ac or dc volts
Current: 0.35 amp
Direct Interelectrode Capacitances:

<table>
<thead>
<tr>
<th></th>
<th>Without Shield</th>
<th>With Shield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid No.1 to plate</td>
<td>0.11 max.</td>
<td>0.08 max.</td>
</tr>
<tr>
<td>Grid No.1 to cathode &amp; grid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.3, grid No.2, and heater.</td>
<td>6.4</td>
<td>6.5</td>
</tr>
<tr>
<td>Plate to cathode &amp; grid</td>
<td>4</td>
<td>8.5</td>
</tr>
<tr>
<td>No.3, grid No.2, and heater.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mechanical:
Operating Position: Any
Maximum Overall Length: 2-3/16"
Maximum Seated Length: 1-15/16"
Length, Base Seat to Bulb Top (Excluding tip): 1-9/16" ± 3/32"
Diameter: 0.750" to 0.875"
Dimensional Outline: See General Section
Bulb: T6-1/2
Base: Small-Button Noval 9-Pin (JEDEC No. E9-1)
Basing Designation for BOTTOM VIEW: 9G

Pin 1—Cathode, Grid No.3
Pin 2—Grid No.1
Pin 3—Cathode, Grid No.3
Pin 4—Heater
Pin 5—Heater
Pin 6—Grid No.2
Pin 7—Plate
Pin 8—Cathode, Grid No.3
Pin 9—Grid No.2

AUDIO-FREQUENCY POWER AMPLIFIER — Class A₁

Maximum Ratings, Absolute Values:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATE VOLTAGE</td>
<td>275 max. volts</td>
</tr>
<tr>
<td>GRID-No.2 (SCREEN-GRID) VOLTAGE.</td>
<td>275 max. volts</td>
</tr>
<tr>
<td>GRID-No.2 INPUT.</td>
<td>3.3 max. watts</td>
</tr>
<tr>
<td>PLATE DISSIPATION.</td>
<td>8.25 max. watts</td>
</tr>
<tr>
<td>PEAK HEATER–CATHODE VOLTAGE:</td>
<td></td>
</tr>
<tr>
<td>Heater negative with respect to cathode.</td>
<td>100 max. volts</td>
</tr>
<tr>
<td>Heater positive with respect to cathode.</td>
<td>100 max. volts</td>
</tr>
</tbody>
</table>

Typical Operation and Characteristics:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Voltage.</td>
<td>250 volts</td>
</tr>
<tr>
<td>Grid-No.2 Voltage.</td>
<td>250 volts</td>
</tr>
</tbody>
</table>

O: see next page.
### BEAM POWER TUBE

**Grid-No.1 (Control-Grid) Voltage**: -12.5 volts  
**Peak AF Grid-No.1 Voltage**: 12.5 volts  
**Zero-Signal Plate Current**: 27 ma  
**Zero-Signal Grid-No.2 Current**: 3 ma  
**Plate Resistance (Approx.)**: 45000 ohms  
**Transconductance**: 3100 µmhos  
**Load Resistance**: 9000 ohms  
**Max.-Signal Power Output**: 2.7 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

---

### RADIO-FREQUENCY POWER AMPLIFIER — Class C

#### Maximum Ratings, Absolute Values:

- **PLATE VOLTAGE**: 275 max. volts  
- **GRID-No.2 (SCREEN-GRID) VOLTAGE**: 275 max. volts  
- **GRID-No.1 (CONTROL-GRID) VOLTAGE**: -165 max. volts  
- **PLATE CURRENT**: 44 max. ma  
- **GRID-No.2 CURRENT**: 16.5 max. ma  
- **GRID-No.1 CURRENT**: 3.3 max. ma  
- **PLATE INPUT**: 11 max. watts  
- **GRID-No.2 INPUT**: 3.3 max. watts  
- **PLATE DISSIPATION**: 8.25 max. watts  

**PEAK HEATER-CATHODE VOLTAGE:**
- Heater negative with respect to cathode: 100 max. volts  
- Heater positive with respect to cathode: 100 max. volts

#### Typical Operation:

- **At frequencies up to 160 Mc**
  - **Plate Voltage**: 250 volts  
  - **Grid-No.2 Voltage**: 180 volts  
  - **Grid-No.1 Voltage**: -30 volts  
  - **From grid-No.1 resistor of**: 15000 ohms  
  - **Peak RF Grid-No.1 Voltage**: 50 volts  
  - **Plate Current**: 30 ma  
  - **Grid-No.2 Current (Approx.)**: 6.5 ma  
  - **Grid-No.1 Current (Approx.)**: 2 ma  
  - **RF Grid-No.1 Driving Power (Approx.)**: 0.1 watt  
  - **Power Output (Approx.)**: 5 watts  
  - **Useful Power Output at 125 Mc**: 5.25 watts

#### Maximum Circuit Values:

- **Grid-No.1-Circuit Resistance**: 50000 max. ohms

---

*With external shield JEDEC NO.315 connected to cathode & grid No.3.*
SPECIAL RATINGS & PERFORMANCE DATA

Shock Rating:
This test is performed on a sample lot of tubes from each production run. Tubes are held rigid and are subjected in four different positions to an impact acceleration of 450 g.

Fatigue Rating:
This test is performed on a sample lot of tubes from each production run. Tubes are rigidly mounted and subjected to 2.5 g vibrational acceleration at a fixed frequency of 25 cycles per second for 100 hours in each of three positions.

Heater-Cycling Life Performance:
This test is performed on a sample lot of tubes from each production run. Tubes will withstand a minimum of 2000 cycles of intermittent operation under the following conditions: heater volts = 7.5 cycled one minute on and one minute off, heater 100 volts positive with respect to cathode, and all other elements connected to ground.