**RCA 4C33 POWER TRIODE**

**FORCED-AIR COOLED**

*Intended especially for pulsed operation*

### GENERAL DATA

**Electrical:**
- Heater, for Unipotential Cathode:
  - Voltage: 5.0 ac or dc volts
  - Current: 9.1 amp
- Starting Current: The heater current must never exceed 16 amperes, even momentarily.
- Minimum Cathode Heating Time: 2 minutes
- Amplification Factor: 25
- Direct Interelectrode Capacitances (Approx.):
  - Grid to Plate: 0.013 μf
  - Grid to Cathode: 0.034 μf
  - Plate to Cathode: 0.007 μf

0 μf with no external shield.

### Mechanical:
- Terminal Connections:
  - H - Heater
  - G - Grid Terminal (Flange)
  - K - Cathode
  - P - Plate Terminal (Radiator)
- Mounting Position: Vertical, with radiator up or down
- Overall Length: 4-25/32" ± 3/32"
- Greatest Diameter: 2.056" ± 0.006"
- Radiator: Integral Part of Tube
- Air Flow: Through Radiator (for max. rated dissipation) 18 min. cfm

The specified air flow at a static pressure of 0.48 inch of water should be delivered through the radiator toward the bulb before and during application of any voltages.

- Radiator Temperature (Measured on the core at end away from incoming air): 180 max. °C
- Grid-Flange Temperature: 140 max. °C
- Glass Temperature: 165 max. °C

### PLATE - PULSED OSCILLATOR - Class C

**Maximum Ratings, Absolute Values:**

*For operating frequencies up to 625 Mc*

- PEAK PLATE PULSE SUPPLY VOLTAGE: 13000 max. volts
- PEAK GRID-BIAS VOLTAGE: -2000 max. volts
- PEAK PLATE CURRENT FROM PULSE SUPPLY: 30 max. amp
- PEAK RECTIFIED GRID CURRENT: 4 max. amp
- DC PLATE CURRENT: 0.030 max. amp
- DC GRID CURRENT: 0.004 max. amp
- PEAK PLATE INPUT: 390000 max. watts
- PLATE DISSIPATION: 250 max. watts
- PULSE LENGTH: 5 max. μsec

**MAY 20, 1949**

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
POWER TRIODE

Typical Operation as Self-Excited Plate-Pulsed Oscillator at 600 Mc

Rectangular Pulse Shape

Peak Plate Pulse Supply Voltage .......... 9000 volts
Peak Plate Current from Pulse Supply ....... 27 amp
Peak Rectified Grid Current .............. 3 amp
Peak Power Output .................... 130000 watts
Duty Factor ................................ 0.001
Cathode Resistor * ...................... 10 ohms
Pulse Repetition Frequency ............... 200 cps

Maximum Circuit Values:
Grid-Circuit Resistance ................. 200 max. ohms

* It is recommended that the entire bias be obtained from a cathode resistor. In certain applications, partial grid-resistor bias may be used provided the grid-circuit resistance does not exceed the indicated maximum value.

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

<table>
<thead>
<tr>
<th>Note</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Current</td>
<td>1</td>
<td>8.2</td>
</tr>
<tr>
<td>Grid-Plate Capacitance</td>
<td>–</td>
<td>11.5</td>
</tr>
<tr>
<td>Grid-Cathode Capacitance</td>
<td>–</td>
<td>27</td>
</tr>
<tr>
<td>Plate-Cathode Capacitance</td>
<td>–</td>
<td>0.5</td>
</tr>
<tr>
<td>Power Output During Pulse</td>
<td>1,2</td>
<td>125000</td>
</tr>
</tbody>
</table>

Note 1: With 5 volts on heater.
Note 2: With "dc plate voltage during pulse" of 9000 volts, cathode resistor of 10 ohms, pulse length of 5 microseconds, duty factor of 0.001, and frequency of 600 Mc.
NOTE 1: MAXIMUM ECCENTRICITY OF ø (AXIS) OF GRID-TERMINAL FLANGE WITH RESPECT TO ø (AXIS) OF PLATE RADIATOR IS 0.040", MEASURED WITHIN 1/32" OF BOTTOM OF RADIATOR.

NOTE 2: MAXIMUM ECCENTRICITY OF ø (AXIS) OF HEATER TERMINAL WITH RESPECT TO ø (AXIS) OF CATHODE-HEATER TERMINAL IS 0.020".

NOTE 3: MAXIMUM ECCENTRICITY OF ø (AXIS) OF CATHODE-HEATER TERMINAL WITH RESPECT TO ø (AXIS) OF GRID-TERMINAL FLANGE IS 0.020".

NOTE 4: SURFACE OF ANNULAR AREA INDICATED BY "A" ON BOTTOM OF RADIATOR IS IN SAME PLANE WITHIN 0.005", AS DETERMINED BY GAUGE 1/16" WIDE AND 0.005" THICK. THIS GAUGE WILL NOT ENTER MORE THAN 1/16" WITH BOTTOM OF RADIATOR RESTING ON FLAT PLATE.

NOTE 5: SURFACE OF ANNULAR AREA INDICATED BY "B" ON GRID-TERMINAL FLANGE IS IN SAME PLANE WITHIN 0.008", AS DETERMINED BY GAUGE METHOD DESCRIBED IN NOTE 4.

NOTE 6: SURFACE OF ANNULAR AREA INDICATED BY "A" ON BOTTOM OF RADIATOR IS PARALLEL WITHIN 0.030" TO SURFACE OF ANNULAR AREA INDICATED BY "B" ON GRID-TERMINAL FLANGE.