5588
UHF POWER TRIODE
FORCED-AIR COOLED, GROUND-GROUNDED GRID TYPE

GENERAL DATA

Electrical:
Heater, for Unipotential Cathode:
  Voltage .......... 6.3 ...... ac or dc volts
  Current .......... 2.5 ...... amp
  Minimum Heating Time .......... 1.0 ...... minute
Amplification Factor .......... 16
Direct Interelectrode Capacitances:
  Grid to Plate .......... 6.0 ...... μμf
  Grid to Cathode .......... 13 ...... μμf
  Plate to Cathode .......... 0.32 max. ...... μμf
  O With external shield connected to grid.

Mechanical:
Terminal Connections:
  H-Heater Pin
  K&H-RF Cathode and
  Heater Cylindrical
  Terminal
  G-Grid RF Cylinder
  P-Plate RF Contact Surface on
  Plate Ring

Mounting Position .......... Vertical, with radiator up or down
Overall Length .......... 3-5/16" ± 3/32"
Maximum Diameter .......... 1.750" ± 0.010"
Radiator .......... Integral Part of Tube
Mounting .......... Special
Air Flow:
  Through Radiator (for max. rated dissipation) .......... 10 min. cfm
The specified air flow at a pressure of 1/2 inch of water should be
delivered by a blower through the radiator toward the bulb and onto
the grid terminal before and during the application of any voltages.
Operation of tube at less than maximum rated dissipation will require
less cooling as shown by accompanying curve of cooling requirements.
Incoming-Air Temperature .......... 45 max. °C
Radiator Temperature .......... 180 max. °C
Grid-Terminal Temperature .......... 140 max. °C

PLATE-MODULATED RF POWER AMPLIFIER—Class C Telephony
Carrier conditions per tube for use with a max. modulation factor of 1.0

Maximum CCS\textsuperscript{a} Ratings, Absolute Values:
DC PLATE VOLTAGE .......... 800 max. volts
DC GRID VOLTAGE .......... -200 max. volts
DC PLATE CURRENT .......... 250 max. ma.
DC GRID CURRENT .......... 80 max. ma.
PLATE INPUT .......... 170 max. watts
PLATE DISSIPATION .......... 130 max. watts

\textsuperscript{a} Rated heater voltage must be applied for a minimum time of 1 minute
before voltages are applied to the other electrodes. Heater voltage
may then be reduced to the indicated typical operating value.

A Continuous Commercial Service.

APRIL 15, 1947
TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
TENTATIVE DATA 1
**Typical Operation in Grounded-Grid Circuit at 1000 Mc:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage</td>
<td>5 volts</td>
</tr>
<tr>
<td>DC Plate Voltage</td>
<td>650 volts</td>
</tr>
<tr>
<td>DC Grid Voltage</td>
<td>-70 volts</td>
</tr>
<tr>
<td>DC Plate Current</td>
<td>250 ma.</td>
</tr>
<tr>
<td>DC Grid Current (Approx.)</td>
<td>30 ma.</td>
</tr>
<tr>
<td>Driving Power (Required by tube and input circuit)*</td>
<td>32 watts</td>
</tr>
<tr>
<td>Power Output (Approx.)</td>
<td>65 watts</td>
</tr>
</tbody>
</table>

* Approximate. A portion of this power appears in the load circuit. In grounded-grid plate-modulated class C rf power amplifier service, the 5588 can be modulated 100 per cent if the rf driver stage is also modulated 100 per cent simultaneously. Care should be taken to insure that the driver-modulation and the amplifier-modulation voltages are exactly in phase.

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**RF POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy**

- Key-down conditions per tube without amplitude modulation

**Maximum CCS® Ratings, Absolute Values:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC PLATE VOLTAGE</td>
<td>1000 max. volts</td>
</tr>
<tr>
<td>DC GRID VOLTAGE</td>
<td>-200 max. volts</td>
</tr>
<tr>
<td>DC PLATE CURRENT</td>
<td>300 max. ma.</td>
</tr>
<tr>
<td>DC GRID CURRENT</td>
<td>100 max. ma.</td>
</tr>
<tr>
<td>PLATE INPUT</td>
<td>250 max. watts</td>
</tr>
<tr>
<td>PLATE DISSIPATION</td>
<td>200 max. watts</td>
</tr>
</tbody>
</table>

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**Typical Operation as Grounded-Grid Amplifier at 1000 Mc:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage</td>
<td>4.5 volts</td>
</tr>
<tr>
<td>DC Plate Voltage</td>
<td>835 volts</td>
</tr>
<tr>
<td>DC Grid Voltage</td>
<td>-70 volts</td>
</tr>
<tr>
<td>DC Plate Current</td>
<td>300 ma.</td>
</tr>
<tr>
<td>DC Grid Current (Approx.)</td>
<td>40 ma.</td>
</tr>
<tr>
<td>Driving Power (Required by tube and input circuit)#</td>
<td>32 watts</td>
</tr>
<tr>
<td>Power Output (Approx.)</td>
<td>100 watts</td>
</tr>
</tbody>
</table>

# Approximate. A portion of this power appears in the load circuit.

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**Typical Operation as Grounded-Grid Oscillator at 1000 Mc:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage</td>
<td>3 volts</td>
</tr>
<tr>
<td>DC Plate Voltage</td>
<td>835 volts</td>
</tr>
<tr>
<td>DC Grid Voltage</td>
<td>-70 volts</td>
</tr>
<tr>
<td>From cathode-bias resistor of</td>
<td>205 ohms</td>
</tr>
<tr>
<td>DC Plate Current</td>
<td>300 ma.</td>
</tr>
<tr>
<td>DC Grid Current (Approx.)</td>
<td>40 ma.</td>
</tr>
<tr>
<td>Power Output (Approx.)</td>
<td>75 watts</td>
</tr>
</tbody>
</table>

* Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

**See next page.**

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**Tentative Data 1**

**April 15, 1947**

**Tube Department**

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
Rated heater voltage must be applied for a minimum time of 1 minute before voltages are applied to the other electrodes. Heater voltage may then be reduced to the indicated typical operating value.

- CCS = Continuous Commercial Service.

Data on operating frequencies for the 5588 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.
NOTE 1: WITH THE CYLINDRICAL SURFACES OF ITS GRID AND CATHODE TERMINALS CLEAN, SMOOTH, AND FREE OF BURRS, THE TUBE WILL ENTER A GAUGE AS SHOWN IN SKETCH G1. THE FOUR CYLINDRICAL HOLES H₁, H₂, H₃, AND H₄ HAVE AXES COINCIDENT WITHIN 0.0005", LENGTHS DETERMINED FROM THE OUTLINE DRAWING, AND SUCCESSIVELY SMALLER DIAMETERS AS SHOWN IN THE SKETCH.

(continued on next page)
THE PLATE RING WILL BE ENTIRELY ENGAGED BY HOLE H₁, AND THE CONTACT SURFACE OF THE PLATE RING WILL SEAT ON THE SHOULDER BETWEEN HOLES H₁ AND H₂. THE PLANE SURFACE OF THIS SHOULDER IS 90° ± 2° TO THE AXES OF THE HOLES. SEATING IS DETERMINED BY FAILURE OF A 0.005" THICKNESS GAUGE, 1/8" WIDE, TO ENTER MORE THAN 1/16" BETWEEN THE SHOULDER SURFACE AND THE PLATE CONTACT SURFACE.

WITH THE TUBE PROPERLY SEATED AS DESCRIBED ABOVE, THE GRID TERMINAL WILL BE ENTIRELY ENGAGED BY HOLE H₃, AND THE CATHODE TERMINAL WILL BE ENGAGED BY HOLE H₄ TO A DEPTH OF AT LEAST 1/4".

NOTE 2: CONCENTRICITY OF THE HEATER TERMINAL WITH RESPECT TO THE CATHODE TERMINAL IS DETERMINED BY A GAUGE AS SHOWN IN SKETCH G₂. THE CYLINDRICAL HOLE H₅ AND THE ANNULAR HOLE H₆ HAVE AXES COINCIDENT WITHIN 0.0005", LENGTHS DETERMINED FROM THE OUTLINE DRAWING, AND DIAMETERS AS SHOWN IN THE SKETCH. THE CATHODE TERMINAL AND THE HEATER TERMINAL WILL ENTER THIS GAUGE TO A DEPTH OF 3/8".

NOTE 3: ROUNDED OR BEVELED NOT TO EXCEED 1/16".

MOUNTING ARRANGEMENT

for use with coaxial-line or cavity circuits

PLATE RING

AIR-COOLED RADIATOR

REMOVABLE CLAMP C

1.600" MIN.

1.560" MIN.

1.800" MIN.

PLATE CONTACT SURFACE

92CS-6833RI

MARCH 1, 1951

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-6835R1B-6833R1
RECOMMENDED HEATER VOLTAGES—OSCILLATOR SERVICE

PLATE MILLIAMPERES I_D = 100

FREQUENCY—MEGACYCLES

AC OR DC HEATER VOLTS

JAN. 29, 1947
TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, MARRISON, NEW JERSEY

92CM-6837