5588
UHF POWER TRIODE

FORCED-AIR COOLED, GROUNDED-GRID TYPE

GENERAL DATA

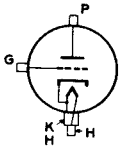
Electrical:

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[o]	0.32 max.	μμf

[o] With external shield connected to grid.

Mechanical:

Terminal Connections:
H – Heater Pin Terminal
K & H – RF Cathode and Heater Cylindrical Terminal



G – Grid RF Cylindrical Terminal
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● 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

▲ 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.

● Continuous Commercial Service.

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Typical Operation in Grounded-Grid Circuit at 1000 Mc:

Heater Voltage▲	5	volts
DC Plate Voltage	650	volts
DC Grid Voltage	-70	volts
DC Plate Current	250	ma.
DC Grid Current (Approx.)	30	ma.
Driving Power (Required by tube and input circuit)*	32	watts
Power Output (Approx.)	65	watts

* 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.

RF POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without amplitude modulation □

Maximum CCS● Ratings, *Absolute Values*:

DC PLATE VOLTAGE	1000 max.	volts
DC GRID VOLTAGE	-200 max.	volts
DC PLATE CURRENT	300 max.	ma.
DC GRID CURRENT	100 max.	ma.
PLATE INPUT	250 max.	watts
PLATE DISSIPATION	200 max.	watts

Typical Operation as Grounded-Grid Amplifier at 1000 Mc:

Heater Voltage▲	4.5	volts
DC Plate Voltage	835	volts
DC Grid Voltage	-70	volts
DC Plate Current	300	ma.
DC Grid Current (Approx.)	40	ma.
Driving Power (Required by tube and input circuit)#	32	watts
Power Output (Approx.)	100	watts

Typical Operation as Grounded-Grid Oscillator at 1000 Mc:

Heater Voltage▲	3	volts
DC Plate Voltage	835	volts
DC Grid Voltage	-70	volts
From cathode-bias resistor of	205	ohms
DC Plate Current	300	ma.
DC Grid Current (Approx.)	40	ma.
Power Output (Approx.)	75	watts

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

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

▲, ●: See next page.

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▲ 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.

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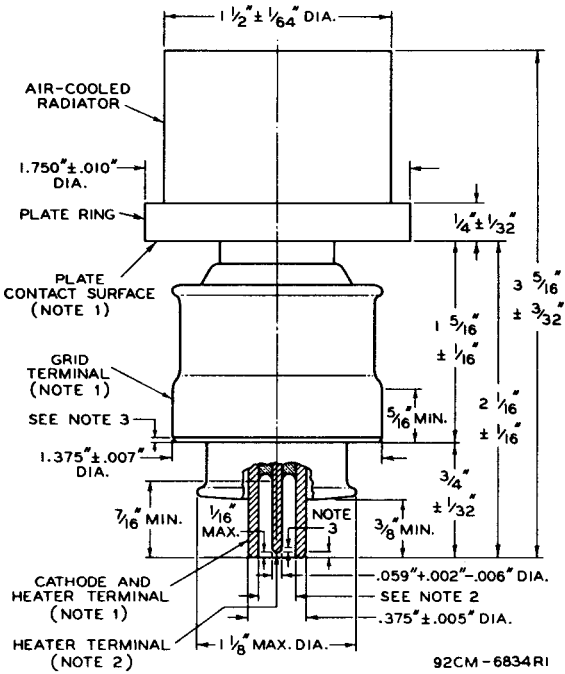

NOTE 1: WITH THE CYLINDRICAL SURFACES OF ITS GRID AND CATHODE TERMINALS CLEAN, SMOOTH, AND FREE OF BURRS, THE TUBE WILL ENTER A GAUGE AS SHOWN IN SKETCH G1. THE FOUR CYLINDRICAL HOLES H_1, H_2, H_3, and H_4 HAVE AXES COINCIDENT WITHIN 0.0005", LENGTHS DETERMINED FROM THE OUTLINE DRAWING, AND SUCCESSIVELY SMALLER DIAMETERS AS SHOWN IN THE SKETCH.

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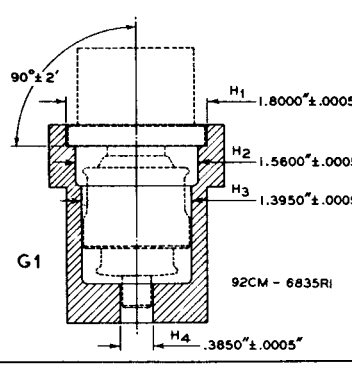

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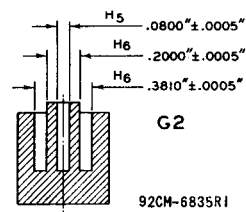
THE PLATE RING WILL BE ENTIRELY ENGAGED BY HOLE H_1, AND THE CONTACT SURFACE OF THE PLATE RING WILL SEAT ON THE SHOULDER BETWEEN HOLES H_1 AND H_2. THE PLANE SURFACE OF THIS SHOULDER IS $90^{\circ} \pm 2'$ TO THE AXES OF THE HOLES. SEATING IS DETERMINED BY FAILURE OF A 0.005" THICKNESS GAUGE, 1/8" WIDE, TO ENTER MORE THAN 1/16" BETWEEN THE SHOULDER SURFACE AND THE PLATE CONTACT SURFACE.

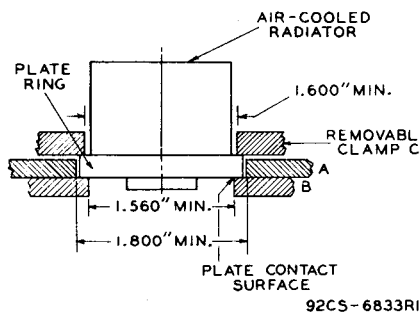
WITH THE TUBE PROPERLY SEATED AS DESCRIBED ABOVE, THE GRID TERMINAL WILL BE ENTIRELY ENGAGED BY HOLE H_3, AND THE CATHODE TERMINAL WILL BE ENGAGED BY HOLE H_4 TO A DEPTH OF AT LEAST 1/4".

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 H_5 AND THE ANNULAR HOLE H_6 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



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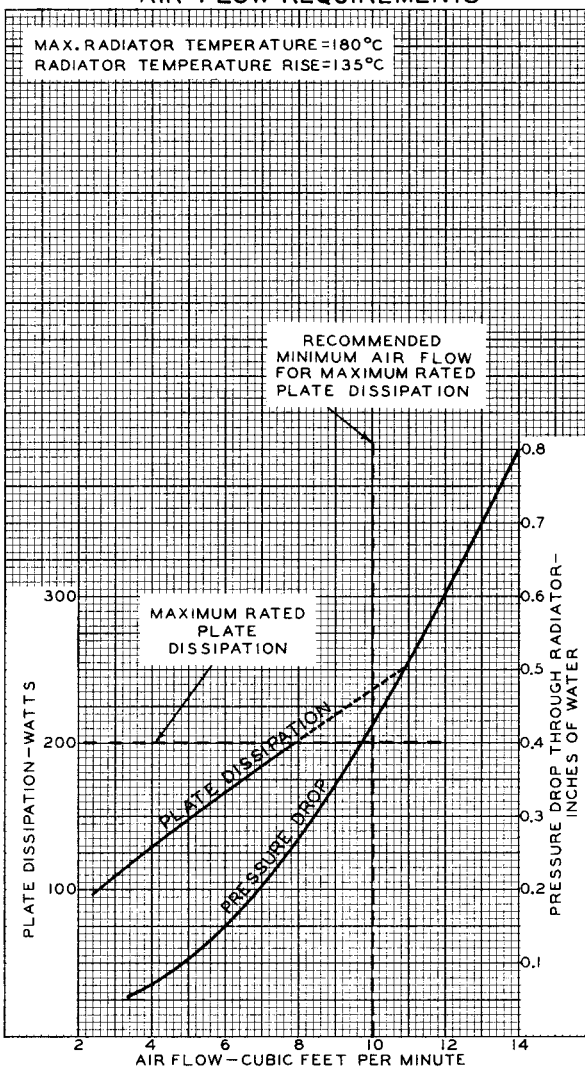
AIR-FLOW REQUIREMENTS



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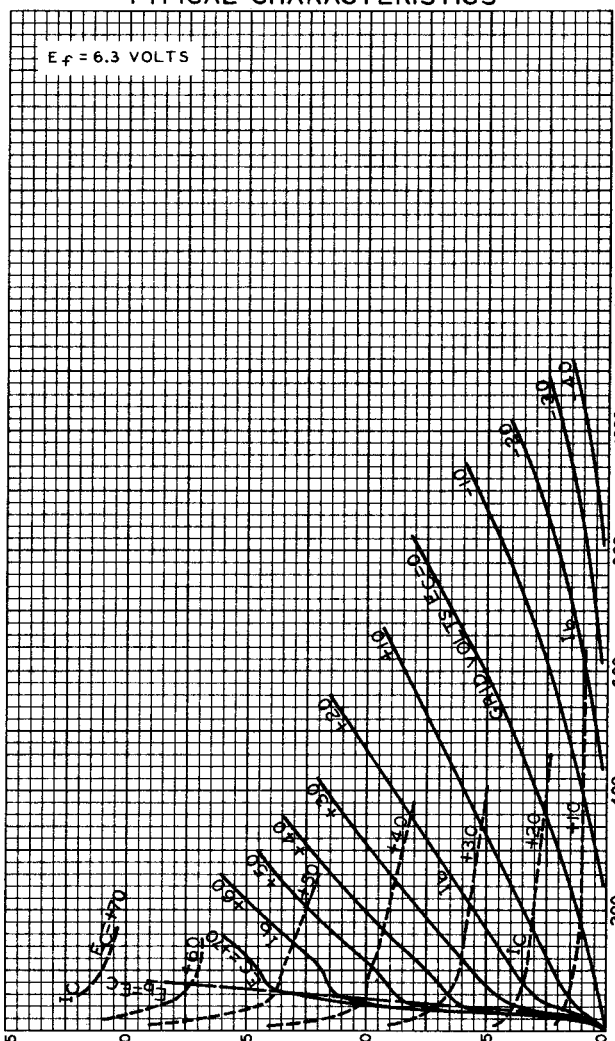
TYPICAL CHARACTERISTICS



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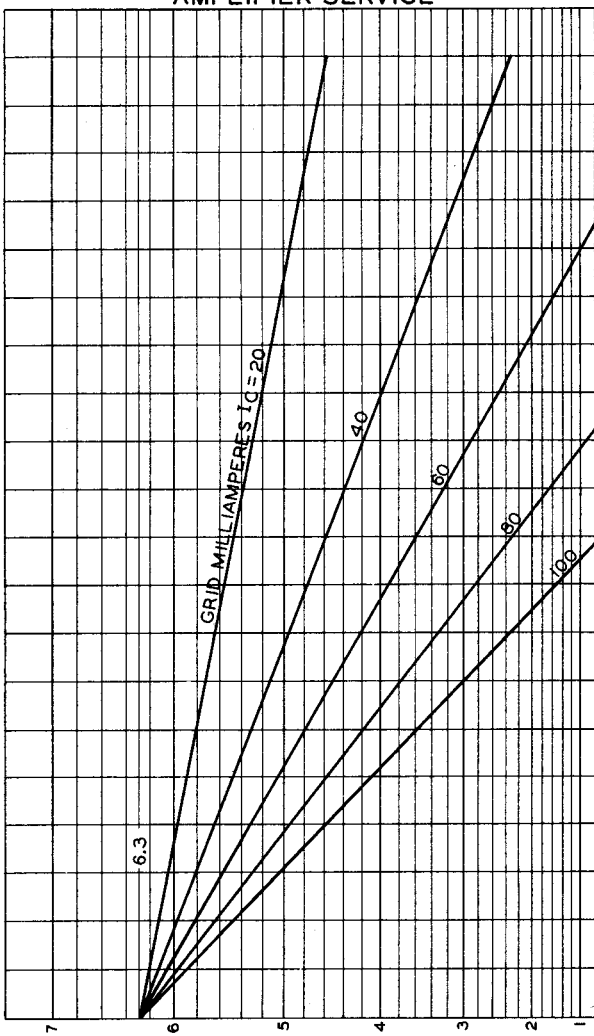
RECOMMENDED HEATER VOLTAGES — AMPLIFIER SERVICE



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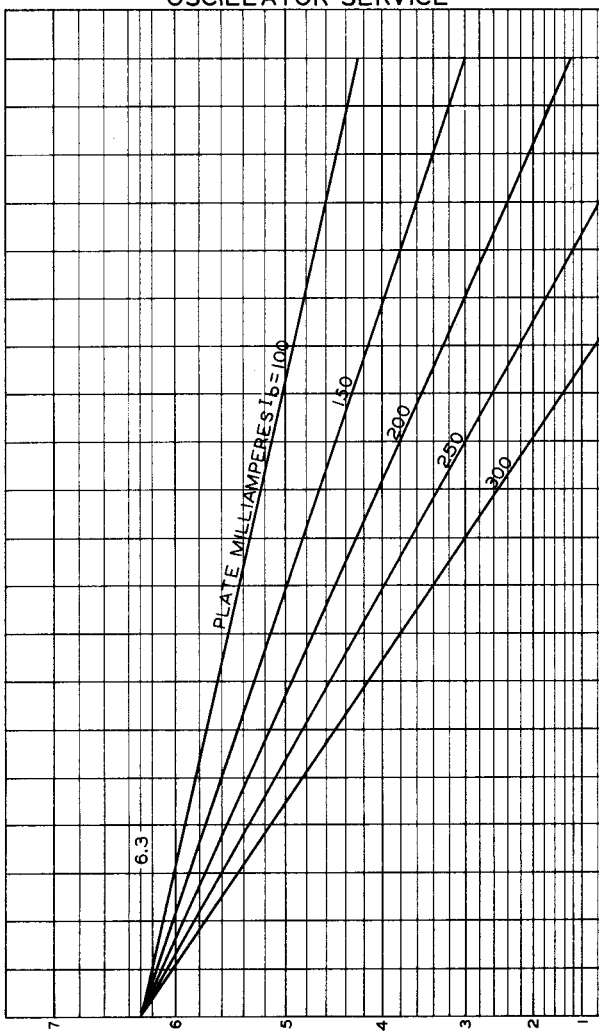
RECOMMENDED HEATER VOLTAGES—OSCILLATOR SERVICE



JAN. 29, 1947

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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