engineering TUBE DATA

F-6800
POWER
TRIODE

ITT Components Division

DESCRIPTION

The F-6800 is a three electrode tube designed for use as an industrial oscillator. The anode is capable of dissipating 20 kilowatts during Continuous Commercial Service. Cooling is accomplished by circulating water. The cathode is a thoriated tungsten filament and may be operated on d-c or single phase a-c. Maximum ratings apply up to 22.5 megacycles and operation up to 50 megacycles is permissible at reduced ratings.

ELECTRICAL

Filament Voltage	7.5 volts
Filament Current	107 amperes
Filament Starting Current	300 amperes max.
Filament Cold Resistance	.01 ohms
Filament Heating Time	15 seconds min.
Amplification Factor	
E_c = -200 v. I_b = 1.25 amps	19.5
Direct Inter-electrode Capacitances	
Grid-Plate	26 μμf
Grid-Filament	25 μμf
Plate-Filament	1.0 μμf

MECHANICAL

Mounting Position	Vertical, anode down
Type of Cooling	Water and Forced Air
Water Flow on Anode	8 gpm
Maximum Outgoing Water Temperature	70° C.
Air Flow on Bulb, Note 1	50 cfm
Glass Temperature (at hottest part)	180° C. max.
Net Weight, approximate	6 pounds

Note 1: Operation at frequencies above 15 megacycles may require air flow onto the dish center in order to hold the temperature of the seals and dish below 180°C. The blower required should deliver 50 cfm through a 3" diameter nozzle.

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INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
P. O. BOX 412, CLIFTON, NEW JERSEY

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Radio-Frequency Power Amplifier and Oscillator - Class C Telegraphy
(Key down conditions per tube without Amplitude Modulation) Note 2

Maximum CCS Ratings, Absolute Values

D-C Plate Voltage	15,000 max. volts
D-C Grid Voltage	-1,800 max. volts
D-C Plate Current	3.5 max. amperes
D-C Grid Current	.50 max. amperes
Plate Input	45 max. kilowatts
Plate Dissipation	20 max. kilowatts

Typical Operation

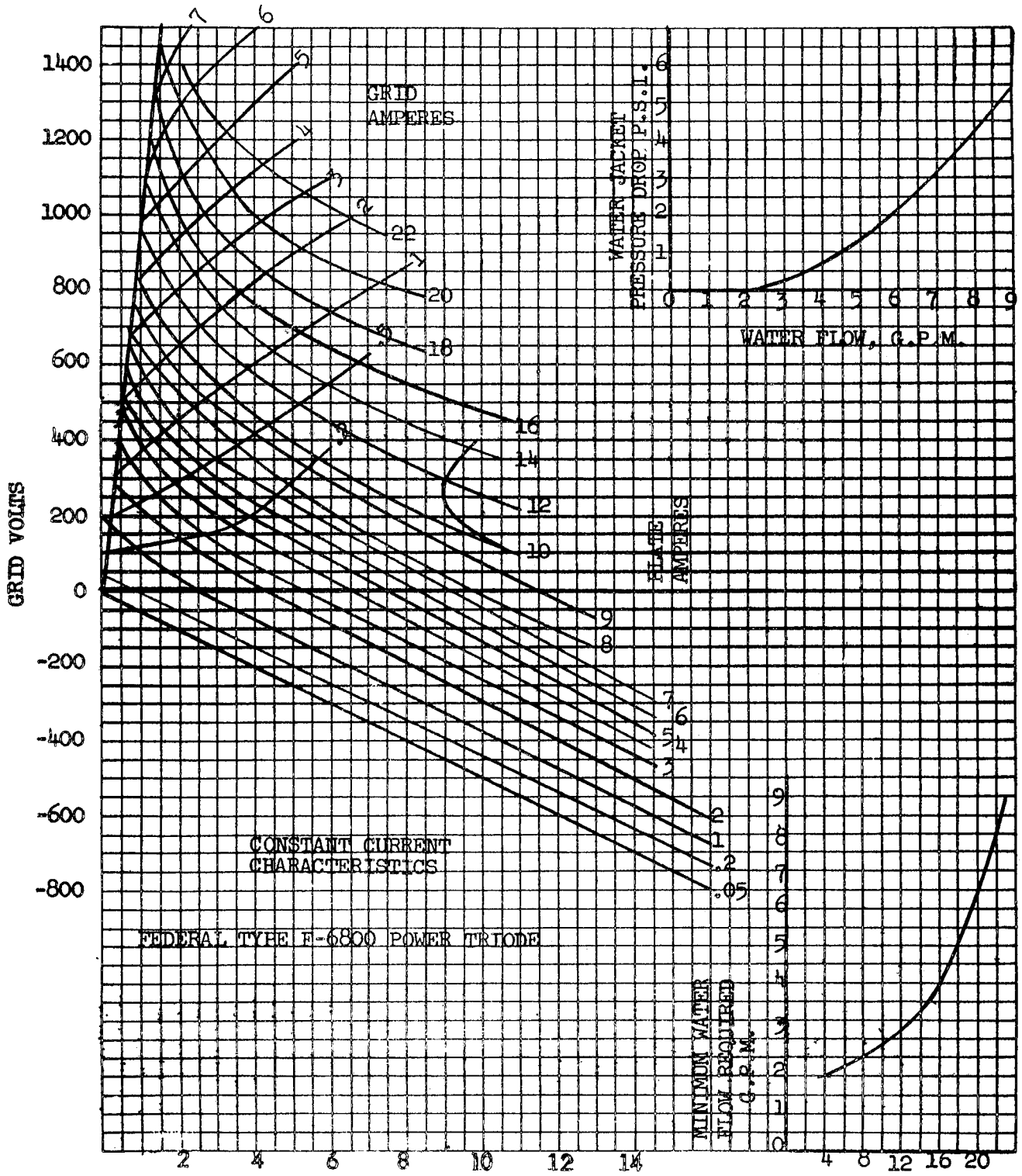
D-C Plate Voltage	12,500 volts
D-C Grid Voltage	-1,200 volts
Peak R-F Grid Voltage	2,100 volts
D-C Plate Current	3.5 amperes
D-C Grid Current, approximate	.45 amperes
Driving Power, approximate	900 watts
Power Output, approximate	33 kilowatts

Ratings versus Frequency

Maximum ratings apply up to 22.5 megacycles. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced according to the tabulation below (other maximum ratings are the same as shown above). Special attention should be given to adequate ventilation of the bulb at these frequencies.

Frequency	27.5	30	50 Megacycles
Percentage of Maximum Rated Plate Voltage and Plate Input	100	80	50 Per Cent

Note 2: Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of the carrier conditions.



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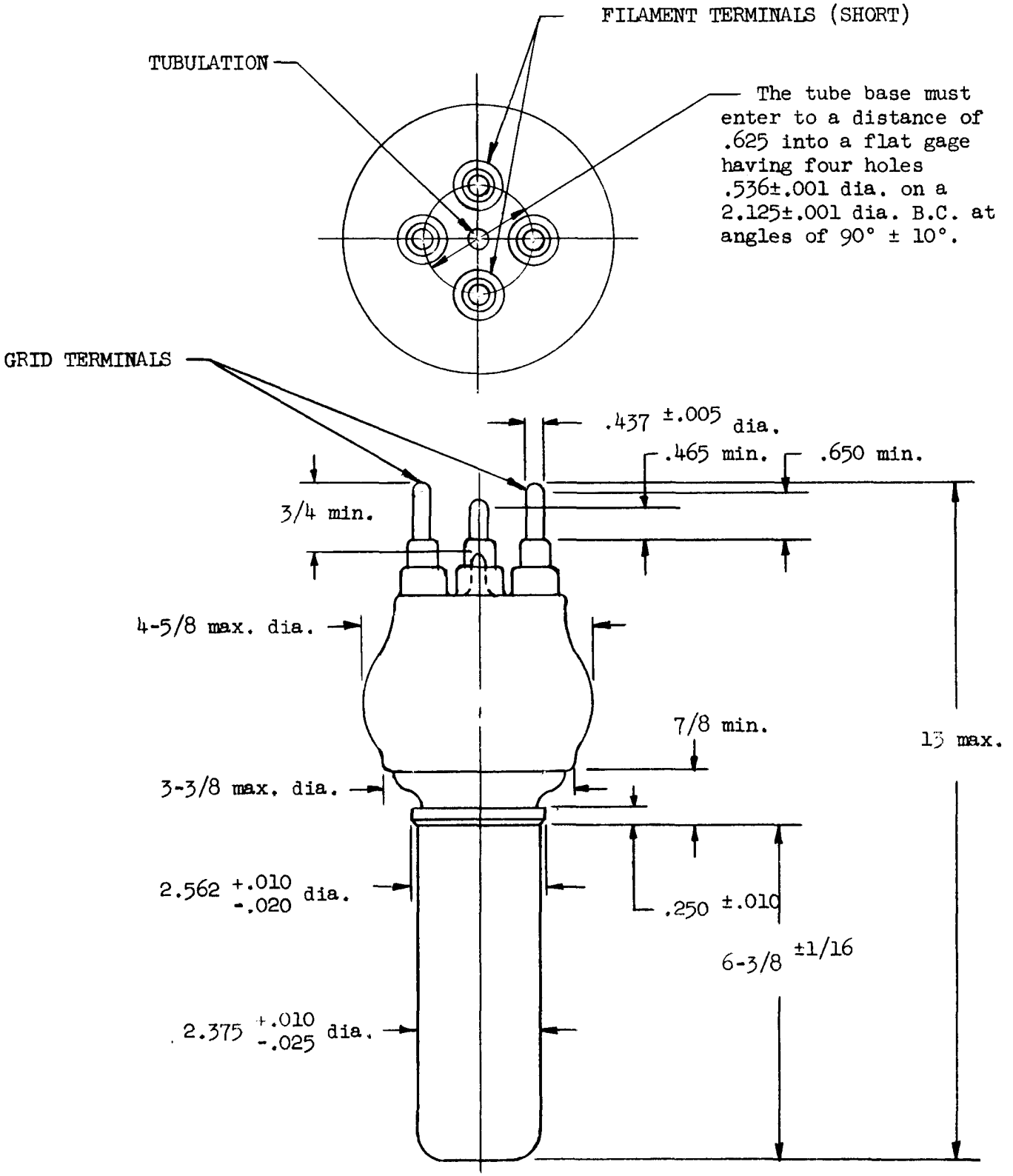

OUTLINE
F-6800 POWER TRIODE