

FEDERAL POWER TRIODE Type F-6399 6 Kilowatts Plate Dissipation



GENERAL DATA

DESCRIPTION:

Federal's Type F-6399 is a three-electrode tube designed for use as an industrial oscillator. The relatively wide spacing between the elements, and the lack of internal insulators make this type tube especially suitable for industrial applications. The anode is water-cooled with an integral water jacket, capable of dissipating 6 kilowatts. The cathode is a thoriated tungsten filament. Maximum ratings apply up to 30 megacycles. Operation up to 50 megacycles is permissible at reduced ratings.

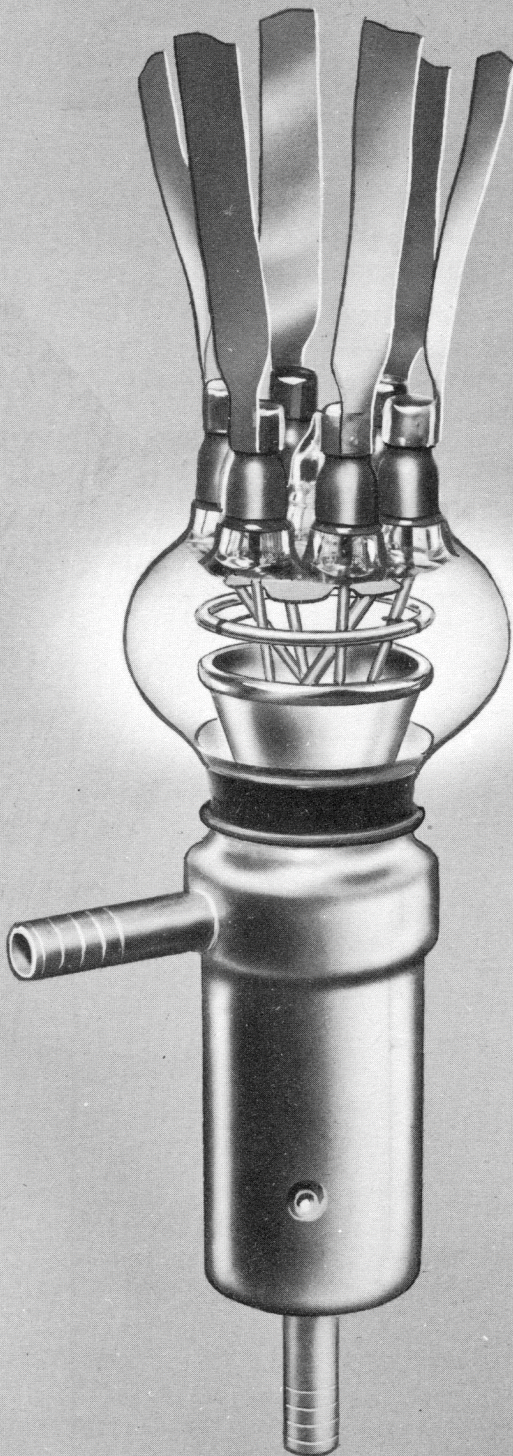
Electrical:

▶ Filament Voltage*	11 Volts
▶ Filament Current	29 Amperes
▶ Amplification Factor, $E_c = -200 \text{ V}, I_b = 0.2 \text{ A}$	25
▶ Interelectrode Capacitances	
Grid-Plate	11.5 $\mu\mu\text{f}$
Grid-Filament	13.8 $\mu\mu\text{f}$
Plate-Filament	1.7 $\mu\mu\text{f}$

*Full rated voltage may be safely applied to the cold filament.

Mechanical:

▶ Mounting Position— Vertical, Anode Down	
▶ Type of Cooling—Water	
Water Flow	3.5 GPM
Max. Outgoing water Temperature	70° C
Maximum Glass Temperature	150° C
▶ Net Weight, Approximate	1 1/4 Pounds



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Maximum Ratings vs. Operating Frequency

Frequency	30	50	Megacycles
Percentage of Maximum			
Rated Plate Voltage and Plate Input			
Class C — Telegraphy	100	75	Per Cent

Maximum Ratings and Typical Operating Conditions

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

(Key-down conditions per tube without amplitude modulation)†

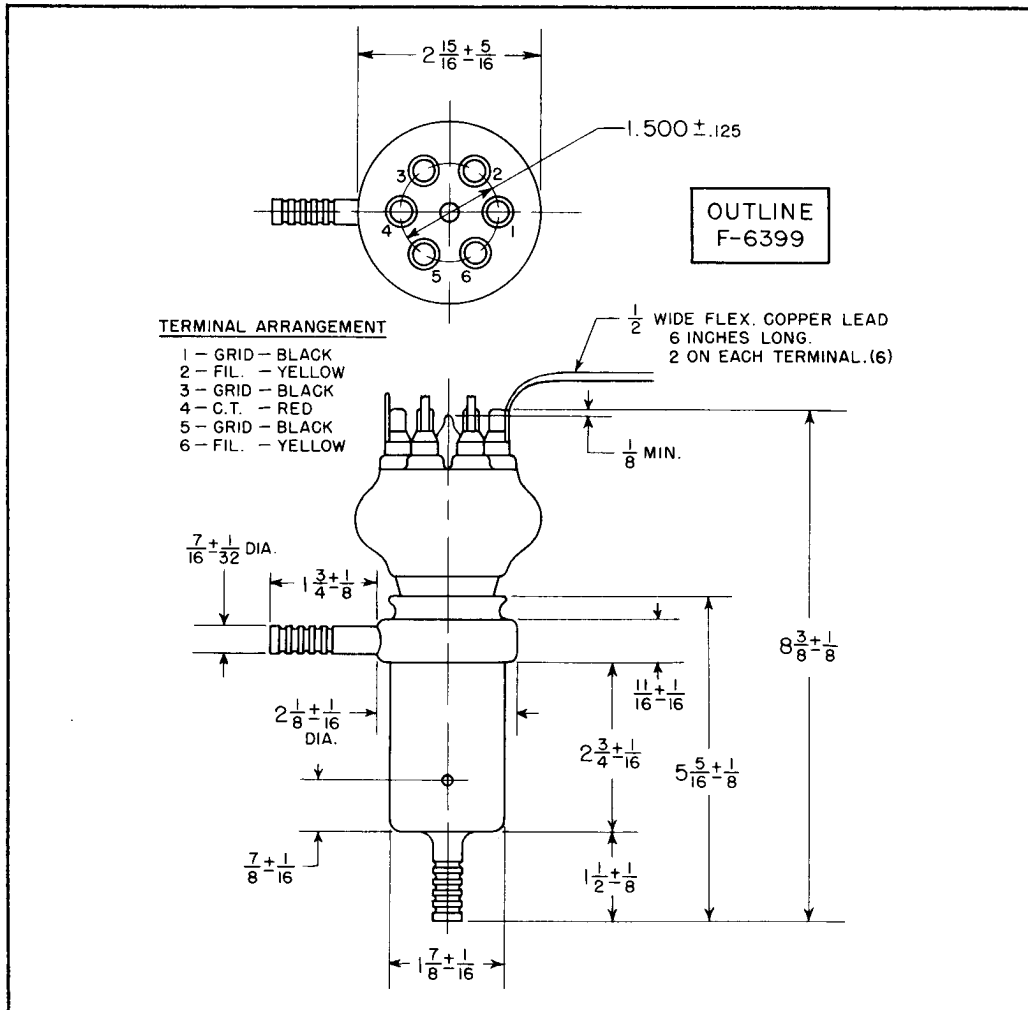
Maximum Ratings, Absolute Values

DC Plate Voltage	6,200 Volts
DC Grid Voltage	—1,500 Volts
DC Plate Current	1.5 Amps.
DC Grid Current	0.16 Amps.
Plate Input	9 KW
Plate Dissipation	6 KW

Typical Operation

DC Plate Voltage	4,500	5,000	6,000	Volts
DC Grid Voltage	—500	—600	—800	Volts
Peak R-F Grid Voltage	1,100	1,300	1,500	Volts
DC Plate Current	1.0	1.2	1.4	Amps.
DC Grid Current, Approximate	0.12	0.13	0.15	Amps.
Driving Power, Approximate	120	160	210	Watts
Power Output, Approximate	3	4	6	KW

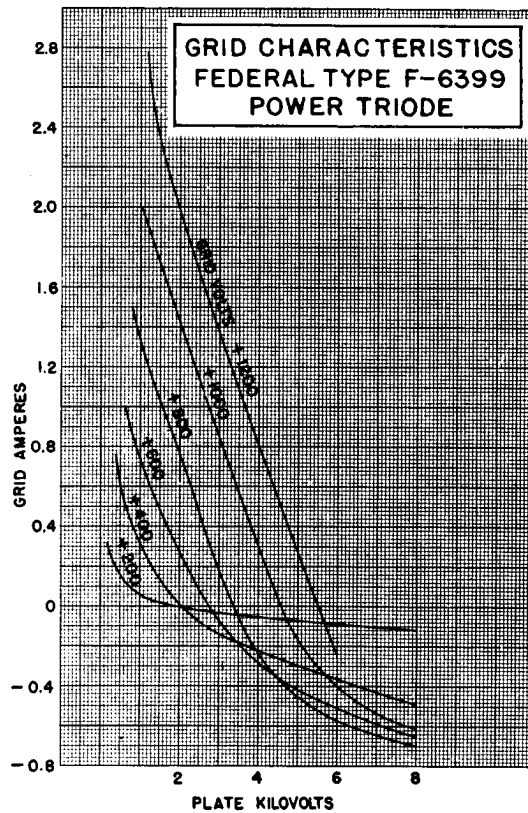
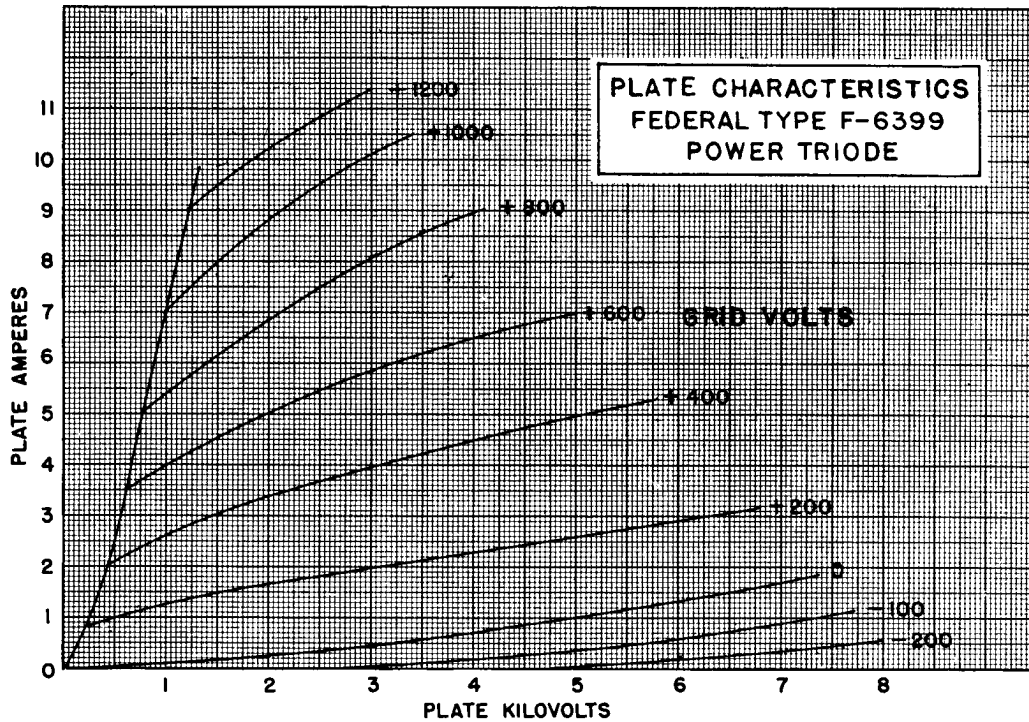
†Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of the carrier conditions.



Integral water jacket incorporated in the tube design.

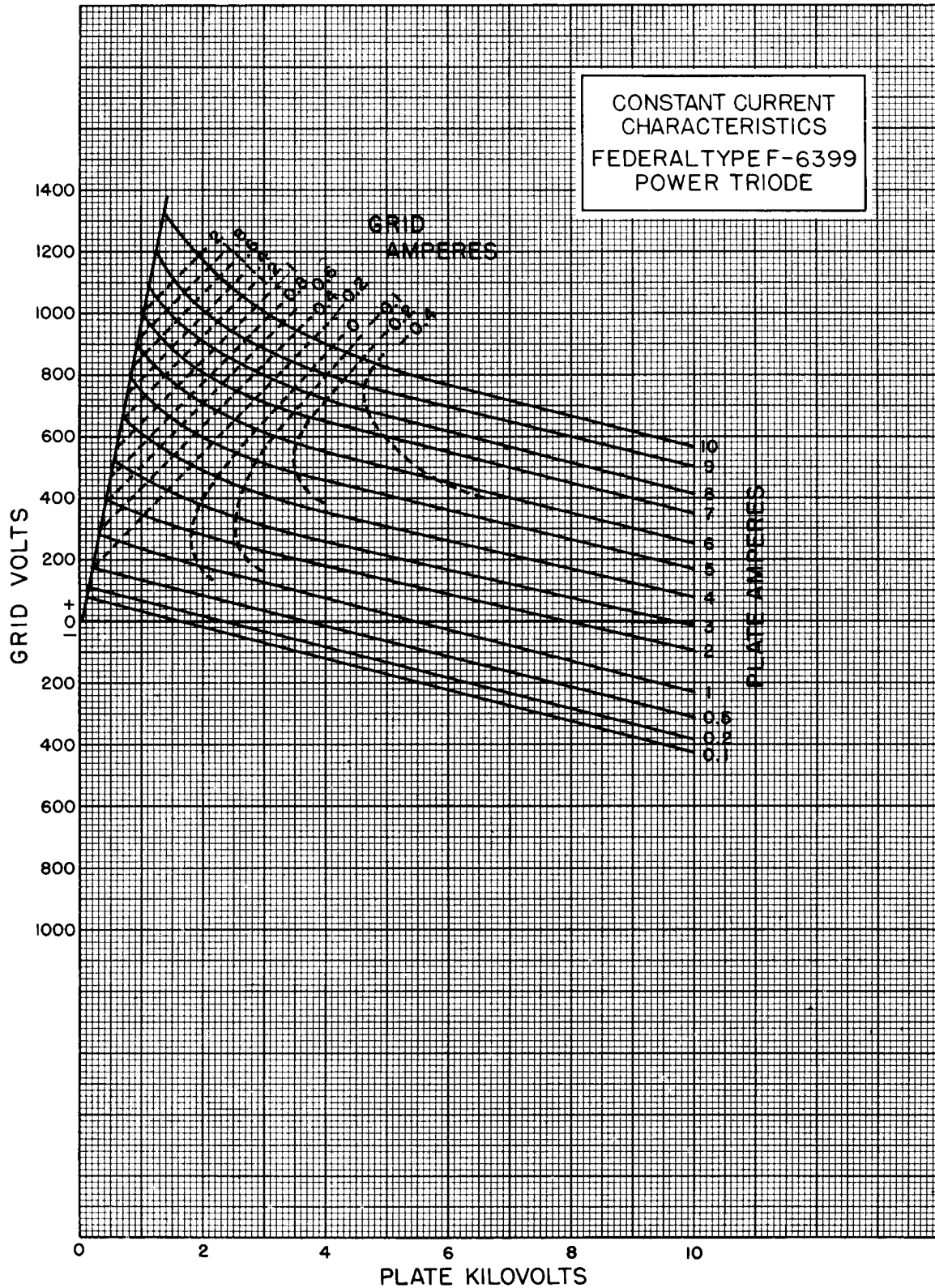
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Grid and Filament leads attached for convenience of equipment designers.



Federal Telephone and Radio Company

100 Kingsland Road VACUUM TUBE DEPARTMENT Clifton, New Jersey