

FEDERAL POWER TRIODE Type F-5668 20 Kilowatts Plate Dissipation



GENERAL DATA

DESCRIPTION:

The F-5668 is a 3-electrode tube designed specifically for radio frequency heating service. In industrial applications, it replaces the Type F-892 without equipment modifications, except for the water jacket. The heavy wall anode is water-cooled and capable of dissipating 20 kilowatts. The tube incorporates rugged kovar plate, grid, and filament seals. The cathode is a pure tungsten filament. Maximum ratings apply up to 5 megacycles with operation up to 20 megacycles permissible at reduced ratings.

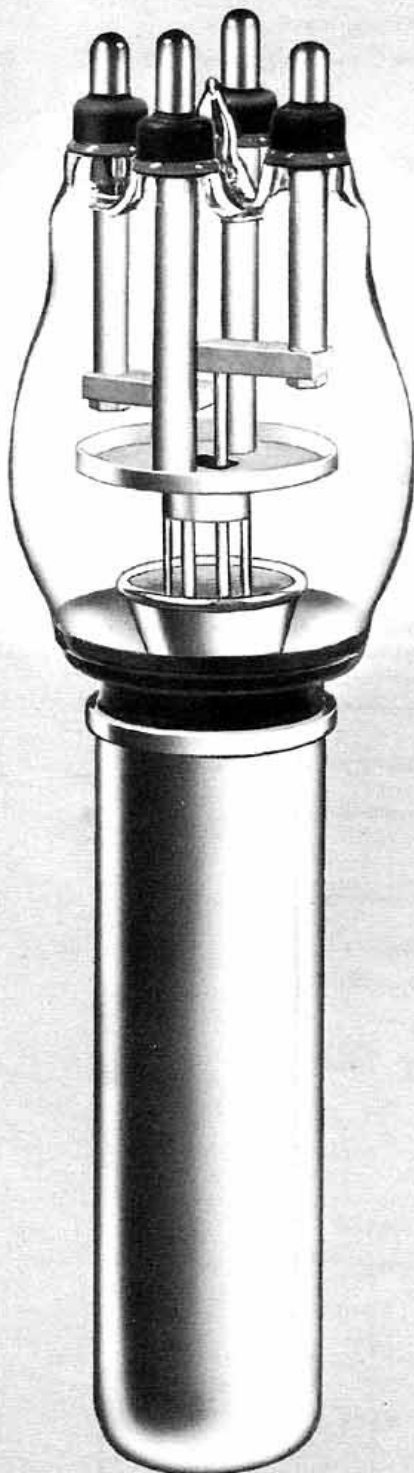
Electrical:

▶ Filament Voltage	22 Volts
▶ Filament Current	60 Amperes
▶ Filament Starting Current	120 Amps. max.
▶ Filament Cold Resistance	.031 Ohms
▶ Peak Cathode Current	9.4 Amperes
▶ Amplification Factor,	
$I_b = 0.75$ amps.,	
$E_c = -50$ volts	50
▶ Interelectrode Capacitances	
Grid-Plate	30 $\mu\mu\text{f}$
Grid-Filament	20 $\mu\mu\text{f}$
Plate-Filament	1.5 $\mu\mu\text{f}$

Mechanical:

▶ Mounting Position—	
Vertical, anode down	
▶ Type of Cooling—Water	
Minimum Water Flow on Anode	3 GPM
Maximum Outgoing Water Temperature	70° C
Maximum Glass Temperature	160° C
Air Flow on bulb*	35 CFM
▶ Net Weight, approximate	10 Pounds

*On center of dish from 3 inch nozzle.



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Maximum Ratings vs. Operating Frequency			
Frequency	5	12.5	20 Megacycles
Percentage of Maximum			
Rated Plate Voltage and Plate Input			
Class C — Telegraphy	100	75	50 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

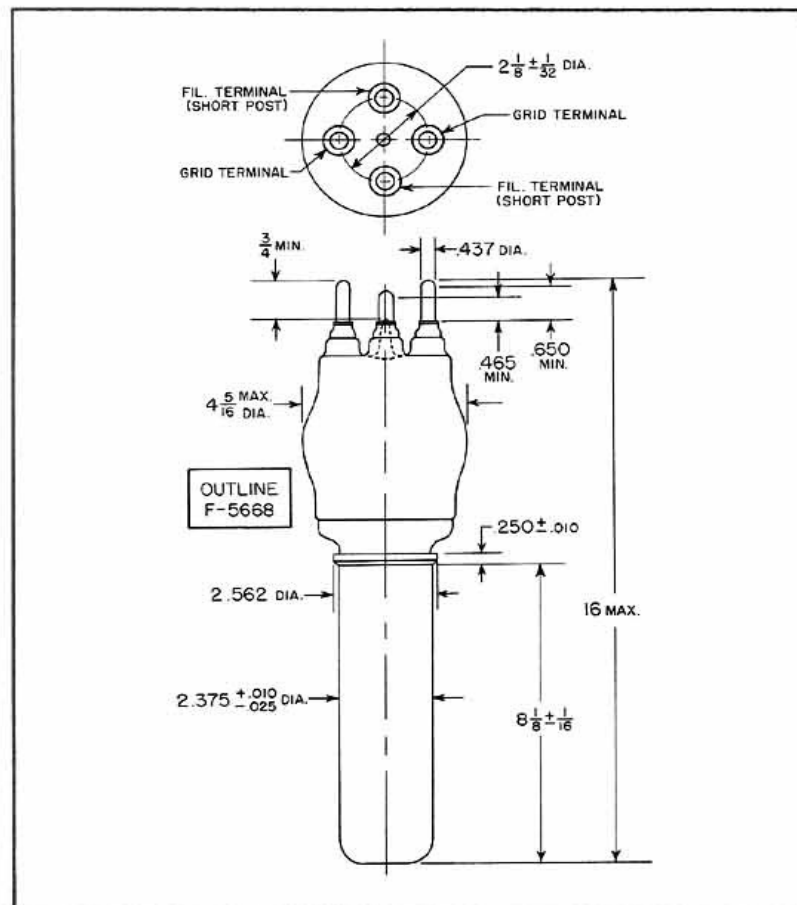
DC Plate Voltage	14,000 Volts
DC Grid Voltage	—3,000 Volts
DC Plate Current	2.0 Amperes
DC Grid Current	0.4 Amperes
Plate Input	28 Kilowatts
Plate Dissipation	20 Kilowatts

DC Grid Voltage	—300	—400	—500 Volts
Peak R-F Grid Voltage	1,000	1,200	1,400 Volts
DC Plate Current	1.6	1.8	2.0 Amperes
DC Grid Current, approximate	0.21	0.22	0.23 Amperes
Driving Power, approximate	200	250	300 Watts
Power Output, approximate	8.7	12.8	17.5 Kilowatts

Typical Operation

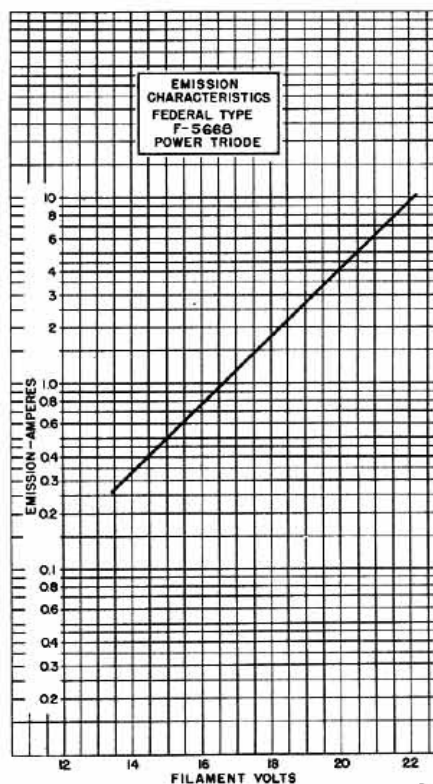
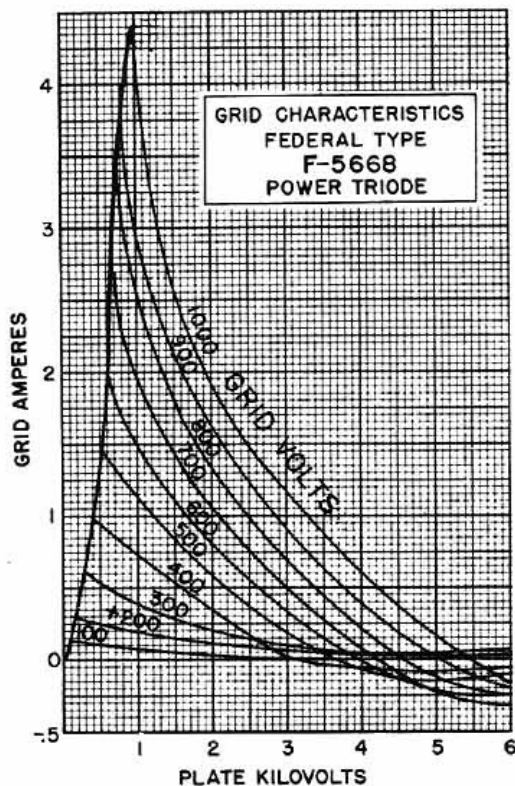
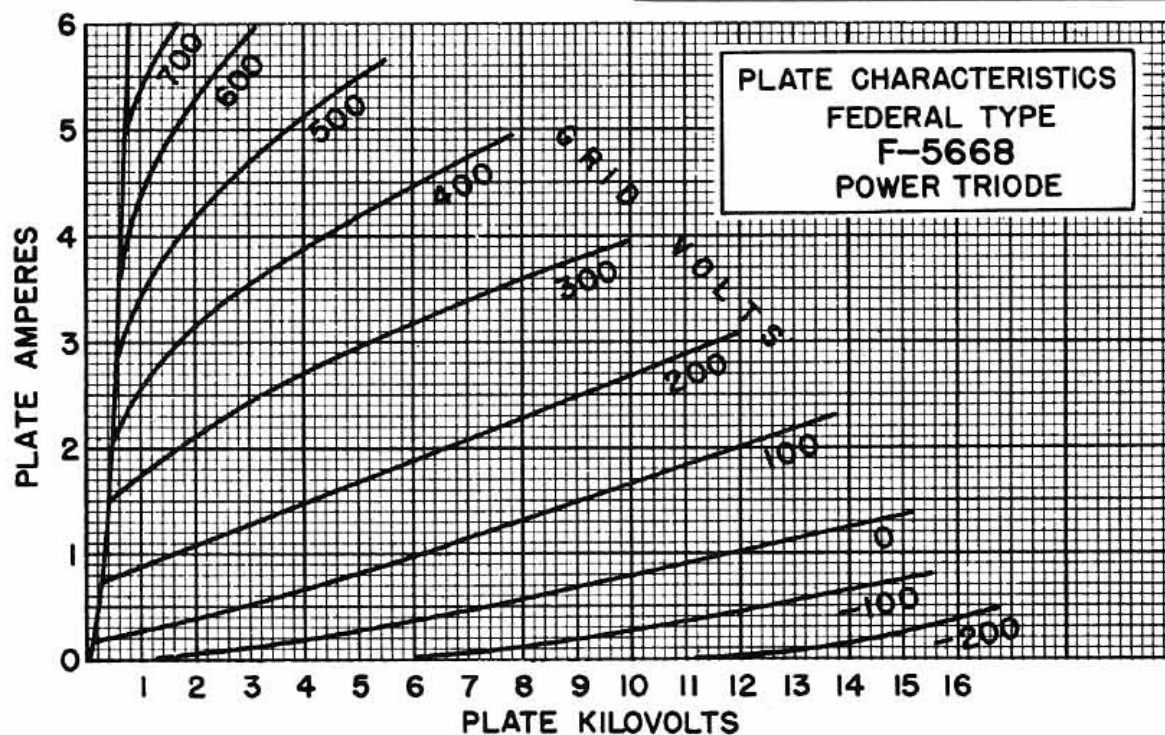
DC Plate Voltage	8,000	10,000	12,000 Volts
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††Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of carrier conditions.



One of the *first* to manufacture power tubes, Federal's experience goes back to the earliest days of the industry.

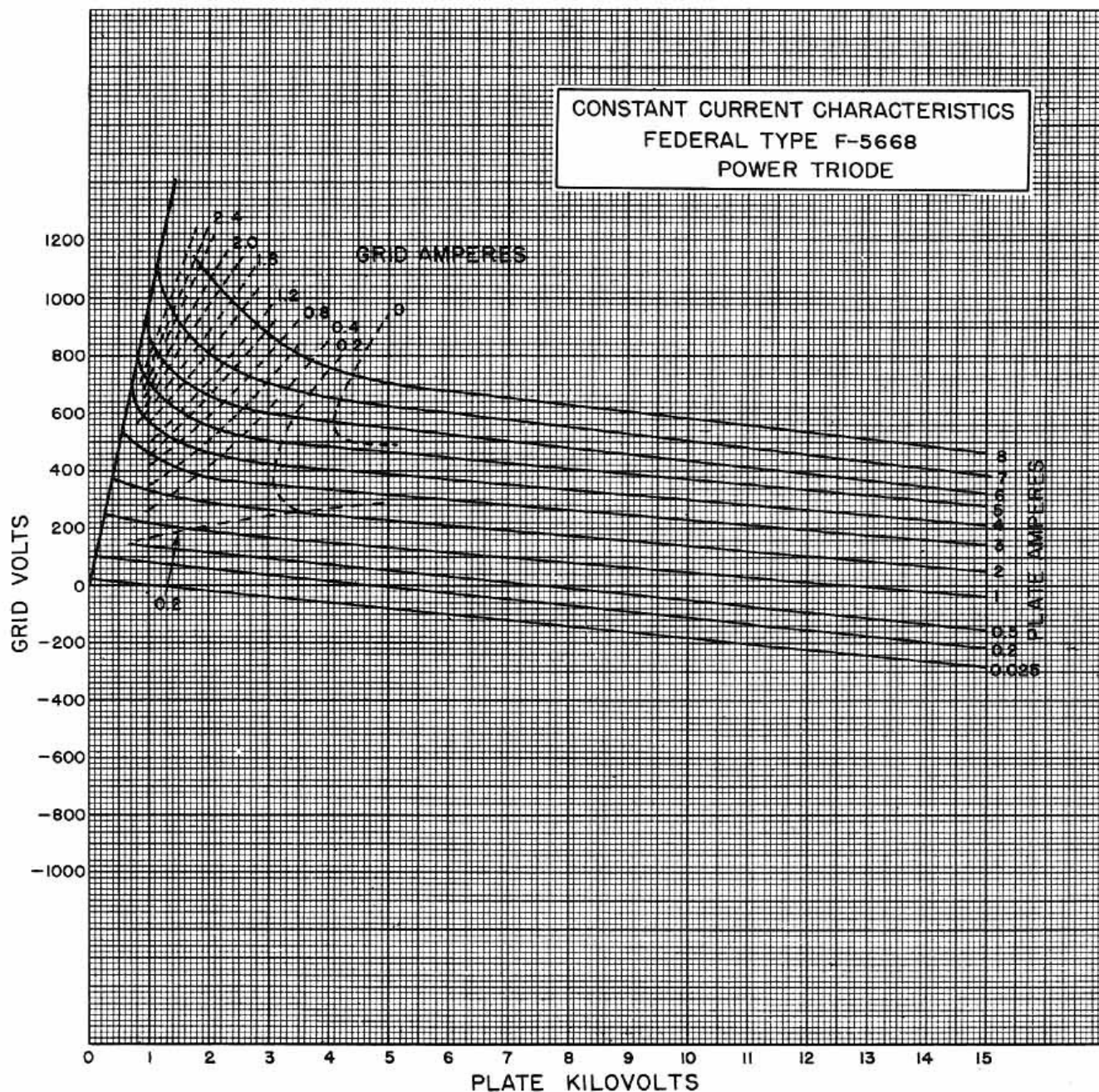
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Type F-5668
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Federal produces tubes of only the highest quality, satisfying the most exacting users.



Federal Telephone and Radio Company

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