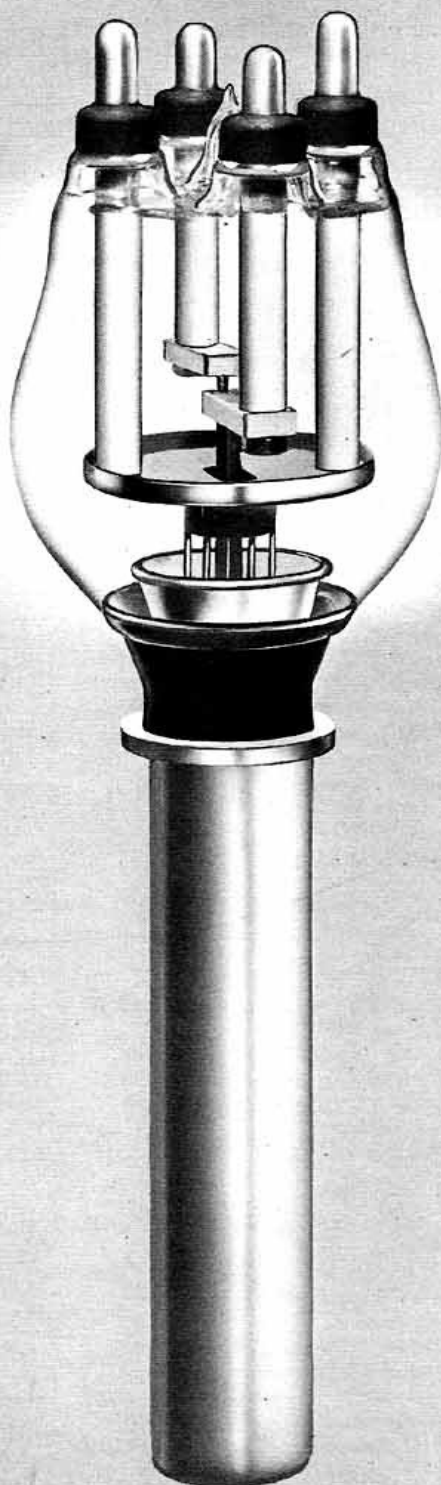




FEDERAL POWER TRIODE

Type F-5606

10 Kilowatts Plate Dissipation



GENERAL DATA

DESCRIPTION:

The F-5606 by Federal is a three-electrode tube engineered for use as a modulator, R-F amplifier, and oscillator. For industrial applications it will replace the F-892 without equipment modifications. The tube incorporates rugged kovar grid, filament and anode seals, making it particularly suitable for industrial applications. The anode, water-cooled, is capable of dissipating 10 kilowatts. The cathode is a pure tungsten filament. Maximum ratings apply up to 1.6 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 Amperes
► Amplification Factor,	
$I_b = 0.75$ amps.,	
$E_c = 50$ volts	50
► Interelectrode Capacitances	
Grid-Plate	30 $\mu\mu\text{f}$
Grid-Filament	16 $\mu\mu\text{f}$
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
► Net Weight, approximate	3 1/2 Pounds

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Maximum Ratings and Typical Operating Conditions

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum Ratings, Absolute Values

DC Plate Voltage	15,000 Volts
Maximum Signal DC Plate Current†	2.0 Amperes
Maximum Signal Plate Input†	20 Kilowatts
Plate Dissipation†	7.5 Kilowatts

Typical Operation

(Unless otherwise specified, values are for two tubes)

DC Plate Voltage	6,000	10,000	12,500 Volts
DC Grid Voltage	0.0	—90	—170 Volts
Peak A-F Grid-to-Grid Voltage	1,000	1,380	1,370 Volts
Zero Signal DC Plate Current	0.5	0.5	0.4 Amperes
Max. Signal DC Plate Current	2.6	3.3	2.8 Amperes
Effective Load Resistance, Plate to Plate	4,200	6,400	10,000 Ohms
Maximum Signal Driving Power, approximate	135	240	160 Watts
Maximum Signal Power Output, approximate	8	20	22 Kilowatts

†Averaged over any audio-frequency cycle of sine-wave form.

RADIO-FREQUENCY POWER AMPLIFIER—CLASS B

(Carrier conditions per tube for use with a maximum modulation factor of 1.0)

Maximum Ratings, Absolute Values

DC Plate Voltage	15,000 Volts
DC Plate Current	1.0 Amperes
Plate Input	15 Kilowatts
Plate Dissipation	10 Kilowatts

Typical Operation

DC Plate Voltage	6,000	10,000	14,000 Volts
DC Grid Voltage	0.0	—100	—190 Volts
Peak R-F Grid Voltage	230	370	440 Volts
DC Plate Current	0.64	0.77	0.82 Amperes
DC Grid Current, approximate	0.03	0.06	0.03 Amperes
Driving Power, approximate‡	77	133	106 Watts
Power Output, approximate	1	2.5	4 Kilowatts

‡At crest of audio-frequency cycle with modulation factor of 1.0.

Maximum Ratings vs. Operating Frequency

Frequency	1.6	7.5	20.0 Megacycles	
Percentage of Maximum Rated Plate Voltage and Plate Input				
Class B	100	85	76	Per Cent
Class C—Telephony	100	85	75	Per Cent
Class C—Telegraphy	100	75	50	Per Cent

PLATE-MODULATED RADIO-FREQUENCY POWER AMPLIFIER—CLASS C TELEPHONY

(Carrier conditions per tube for use with a maximum modulation factor of 1.0)

Maximum Ratings, Absolute Values

DC Plate Voltage	10,000 Volts
DC Grid Voltage	—3,000 Volts
DC Plate Current	1.0 Amperes
DC Grid Current	0.3 Amperes
Plate Input	10 Kilowatts
Plate Dissipation	6.6 Kilowatts

Typical Operation

DC Plate Voltage	6,000	8,000	10,000 Volts
DC Grid Voltage	—1,000	—1,300	—1,600 Volts
Peak R-F Grid Voltage	1,650	1,950	2,250 Volts
DC Plate Current	0.83	0.82	0.78 Amperes
DC Grid Current, approximate	0.28	0.24	0.23 Amperes
Driving Power, approximate	420	430	460 Watts
Power Output, approximate	3.5	5	6 Kilowatts

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

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

Maximum Ratings, Absolute Values

DC Plate Voltage	15,000 Volts
DC Grid Voltage	—3,000 Volts
DC Plate Current	2.0 Amperes
DC Grid Current	0.4 Amperes
Plate Input	30 Kilowatts
Plate Dissipation	10 Kilowatts

Typical Operation

DC Plate Voltage	8,000	10,000	12,000 Volts
DC Grid Voltage	—1,000	—1,300	—1,600 Volts
Peak R-F Grid Voltage	1,700	2,150	2,550 Volts
DC Plate Current	1.17	1.4	1.55 Amperes
DC Grid Current, approximate	0.22	0.24	0.23 Amperes
Driving Power, approximate	330	495	565 Watts
Power Output, approximate	6.5	10	14 Kilowatts

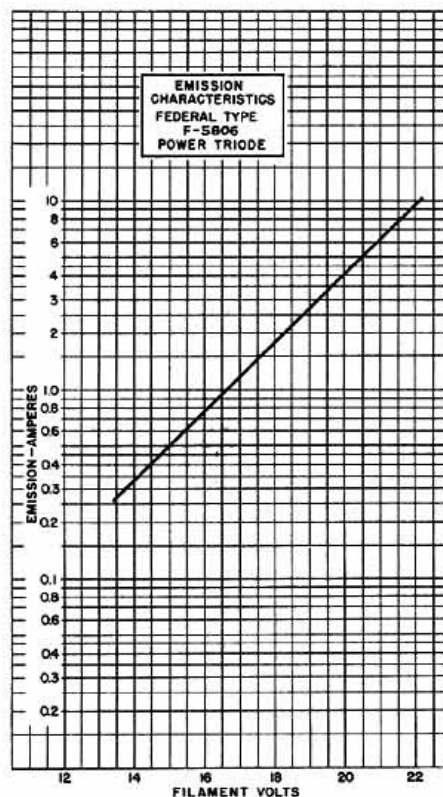
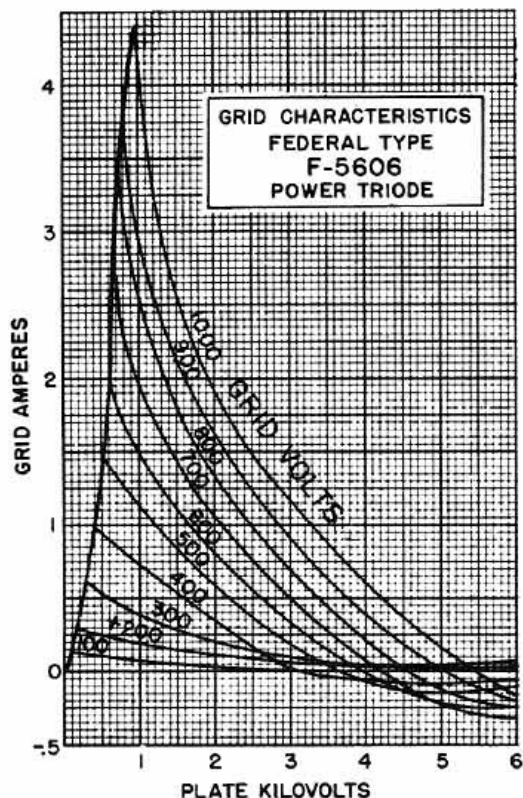
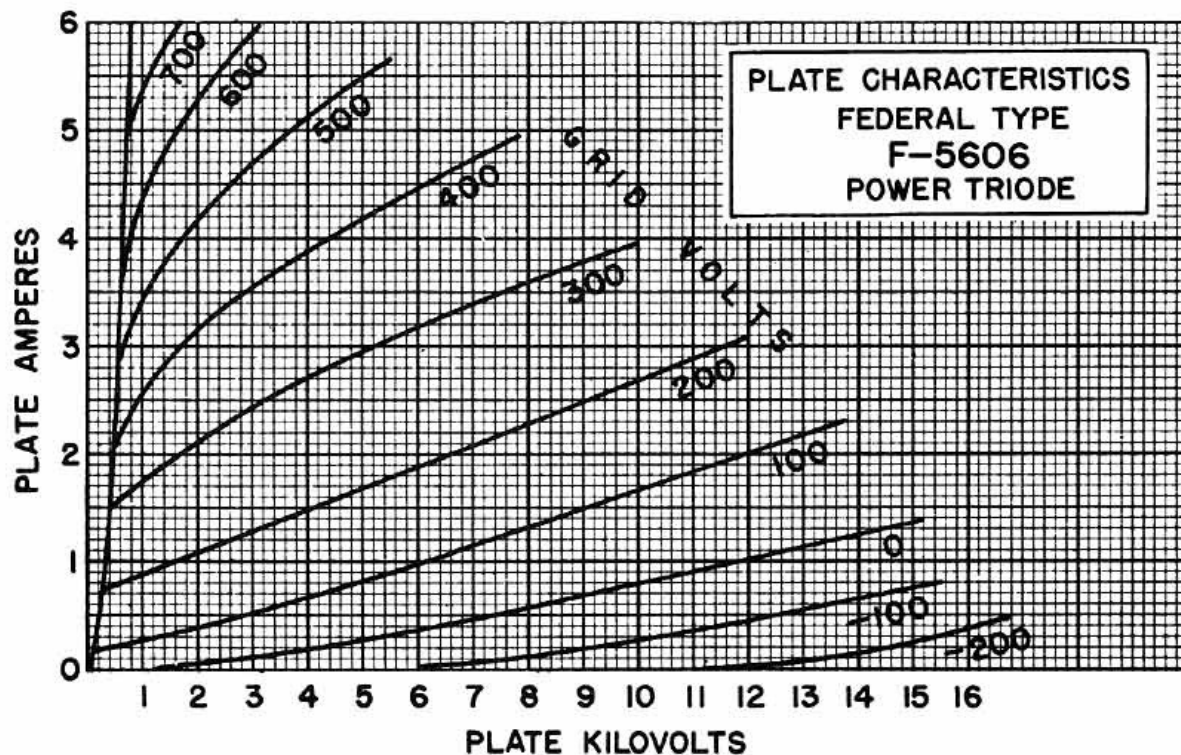
†Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of carrier conditions.

Incorporates Federal's proven double helical filament design, which eliminates filament-to-grid shorts due to bowed filaments.

FEDERAL POWER TRIODE

Type F-5606

10 Kilowatts Plate Dissipation

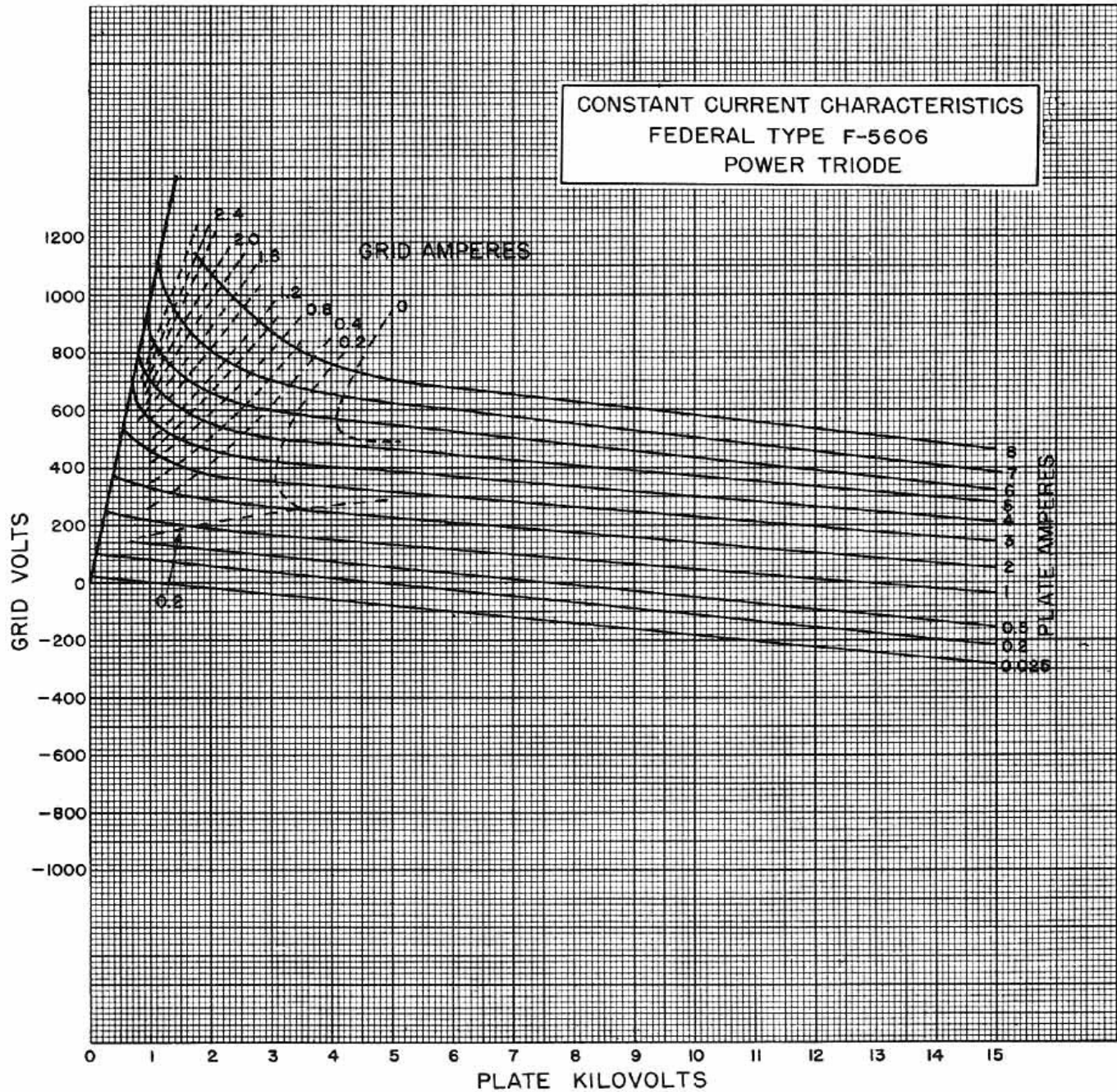


FEDERAL POWER TRIODE

Type F-5606

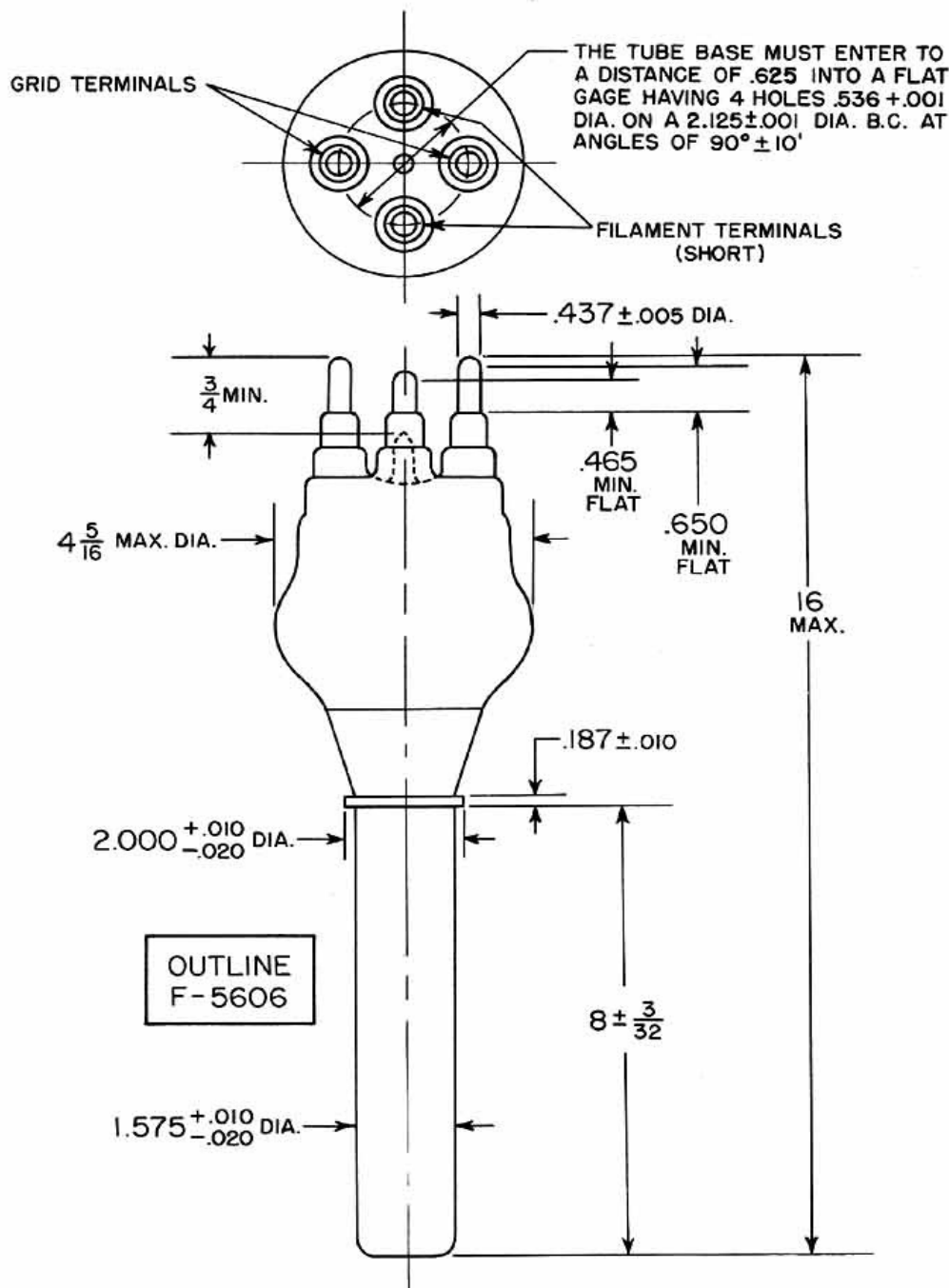
10 Kilowatts Plate Dissipation

Rugged kovar to glass seals used throughout.



Where a center-tapped filament is not required, the F-5606 will replace the F-892 in communications equipment.

FEDERAL POWER TRIODE Type F-5606 10 Kilowatts Plate Dissipation



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Federal Telephone and Radio Company

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