

FEDERAL POWER TRIODE Type F-5918-A 70 Kilowatts Plate Dissipation



GENERAL DATA

DESCRIPTION:

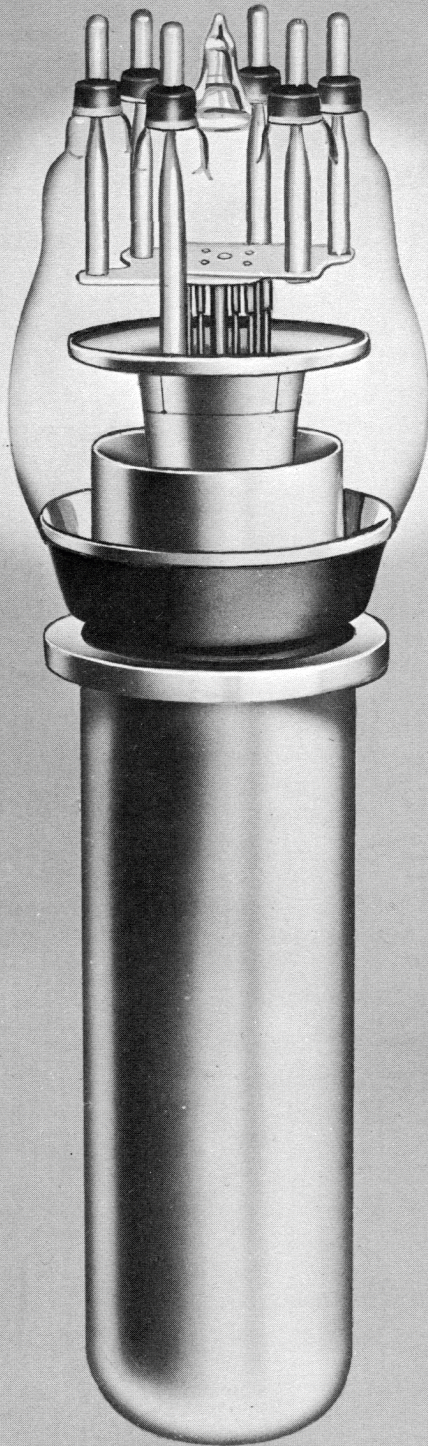
Federal's F-5918-A is a three-electrode tube designed for use as radio-frequency amplifier, oscillator, or Class B modulator. The anode is water-cooled, capable of dissipating 70 kilowatts. The cathode is a thoriated tungsten filament. Maximum ratings apply up to 22 megacycles.

Electrical:

► Filament Voltage	11 Volts
► Filament Current	285 Amperes
► Filament Starting Current	1000 Amperes max.
► Filament Cold Resistance	.005 Ohms
► Peak Cathode Current	100 Amperes
► Amplification Factor, at $I_b = 2$ amps. $E_b = -200$ volts	37
► Interelectrode Capacitances	
Grid-Plate	34.5 $\mu\mu\text{f}$
Grid-Filament	75 $\mu\mu\text{f}$
Plate-Filament	2.4 $\mu\mu\text{f}$

Mechanical:

► Mounting Position— Vertical, Anode Down	
► Type of Cooling—Water Water Flow on Anode	30 GPM
Maximum Outgoing Water Temperature	70° C
Maximum Glass Temperature	150° C
► Net Weight, approximate	25 Lbs.



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The F-5918-A has given *proven* service in 200 KW plate modulated short-wave transmitters.

Maximum Ratings and Typical Operating Conditions

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum Ratings, Absolute Values

DC Plate Voltage	17,500 Volts
Maximum Signal DC Plate Current†	15 Amperes
Maximum Signal Plate Input†	175 Kilowatts
Plate Dissipation†	70 Kilowatts

Typical Operation

(Unless otherwise specified, values are for two tubes)

DC Plate Voltage	14,000 Volts
DC Grid Voltage	—300 Volts
Peak A-F Grid-to-Grid Voltage	1,600 Volts
Zero Signal DC Plate Current	2 Amperes
Maximum Signal DC Plate Current	16 Amperes
Effective Load Resistance, Plate to Plate	2,250 Ohms
Max. Sig. Driving Power, approx.	1,500 Watts
Max. Sig. Power Output, approx.	150 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	17,500 Volts
DC Plate Current	12 Amperes
Plate Input	100 Kilowatts
Plate Dissipation	70 Kilowatts

Typical Operation

DC Plate Voltage	15,000 Volts
DC Grid Voltage	—375 Volts
Peak R-F Grid Voltage	500 Volts
DC Plate Current	4.9 Amperes
DC Grid Current	0.0 Amperes
Driving Power, approximate‡	770 Watts
Power Output, approximate	25 Kilowatts

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

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	14,000 Volts
DC Grid Voltage	—3,000 Volts
DC Plate Current	12 Amperes
DC Grid Current	2 Amperes
Plate Input	165 Kilowatts
Plate Dissipation	47 Kilowatts

Typical Operation

DC Plate Voltage	14,000 Volts
DC Grid Voltage	—800 Volts
Peak R-F Grid Voltage	1,550 Volts
DC Plate Current	10 Amperes
DC Grid Current	1.4 Amperes
Driving Power, approximate	2 Kilowatts
Power Output, approximate	104 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	17,500 Volts
DC Grid Voltage	—3,000 Volts
DC Plate Current	18 Amperes
DC Grid Current	2 Amperes
Plate Input	300 Kilowatts
Plate Dissipation	70 Kilowatts

Typical Operation

DC Plate Voltage	17,500 Volts
DC Grid Voltage	—1,000 Volts
Peak R-F Grid Voltage	1,960 Volts
DC Plate Current	13.8 Amperes
DC Grid Current, approximate	2 Amperes
Driving Power, approximate	3.6 Kilowatts
Power Output, approximate	180 Kilowatts

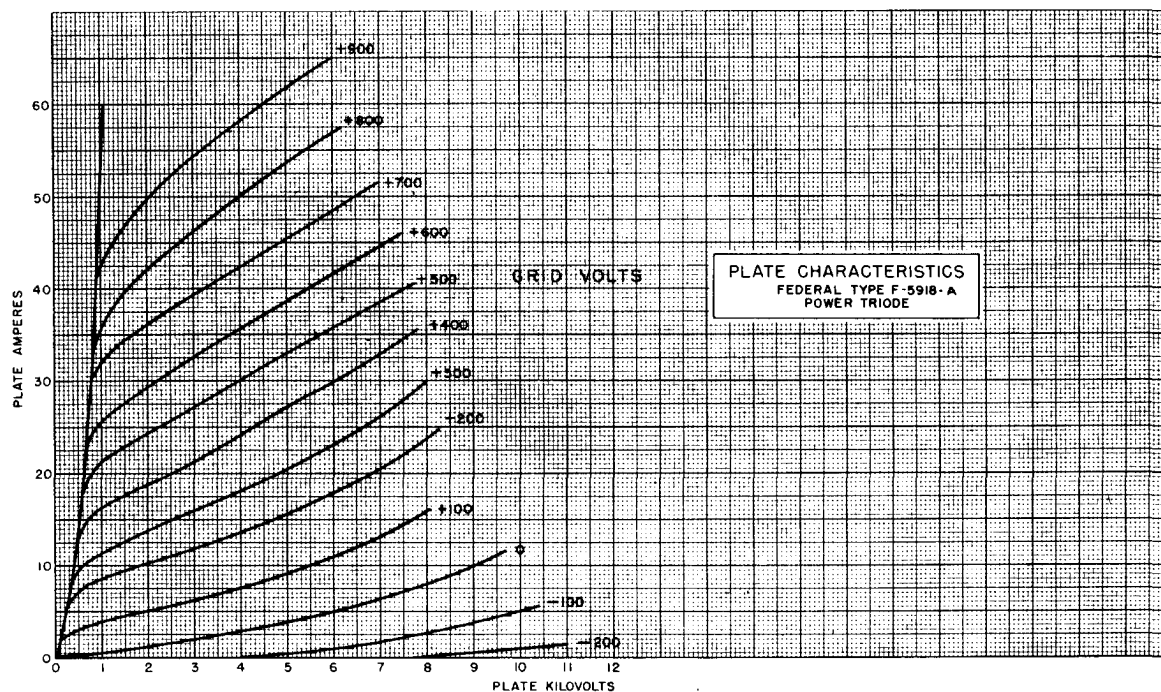
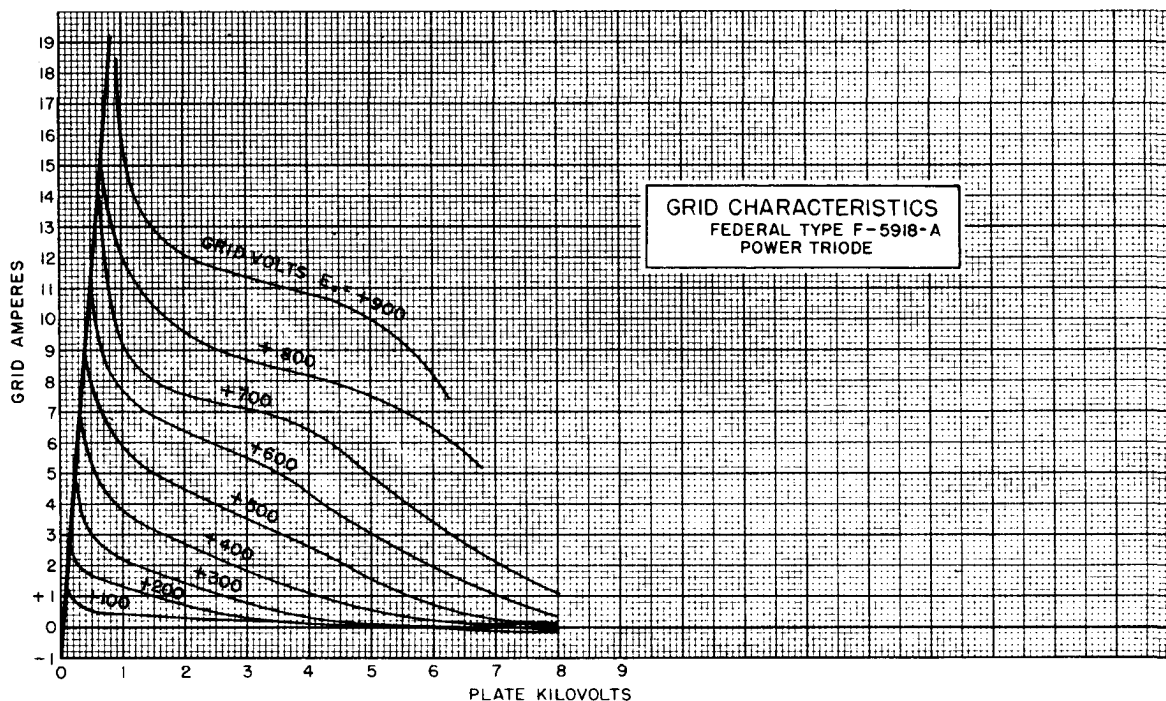
¶Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of carrier conditions.

The F-5918-A grid is especially treated for unusually high heat dissipation contributing to stability in operation.

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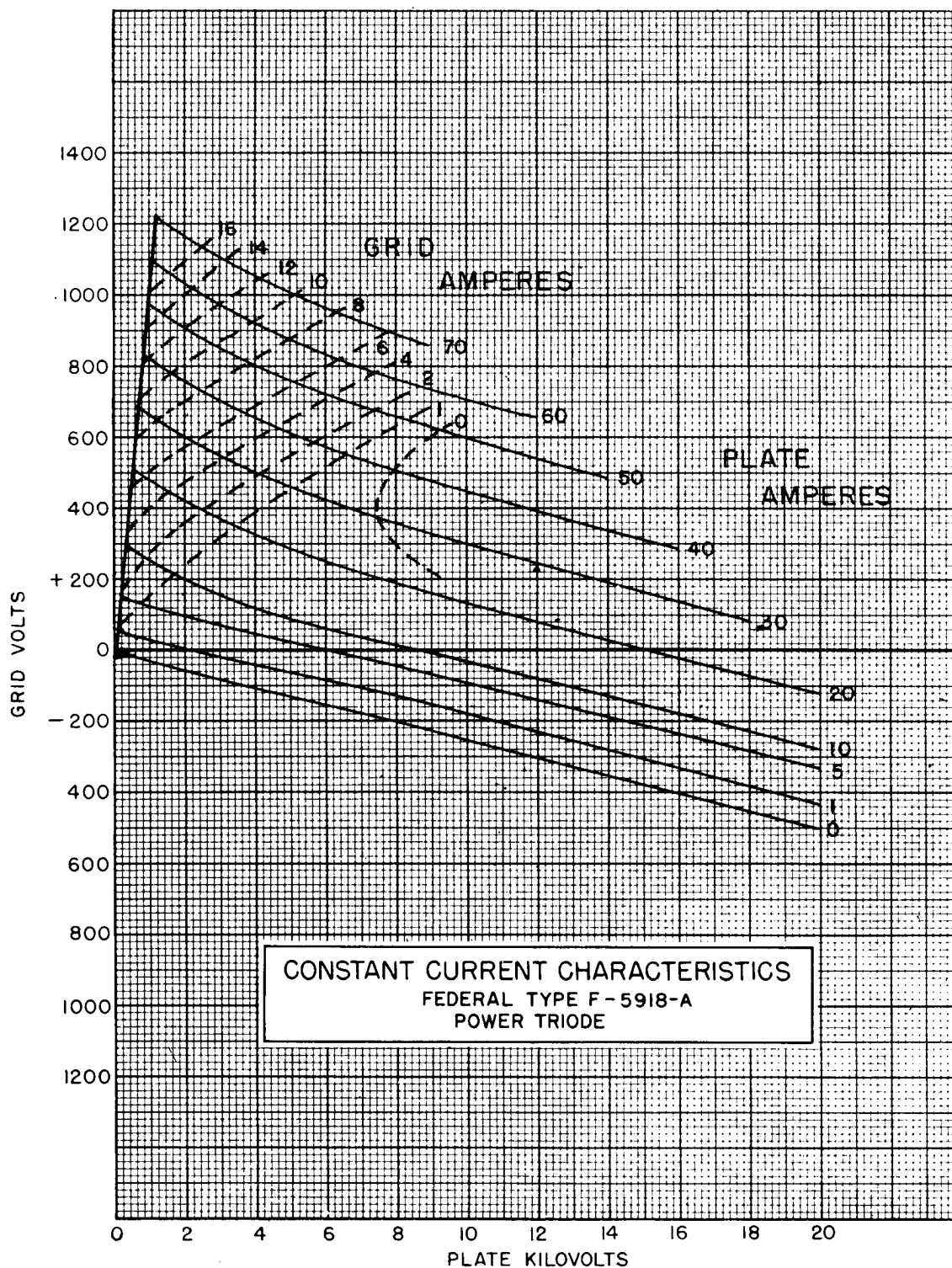
70 Kilowatts Plate Dissipation



FEDERAL POWER TRIODE Type F-5918-A 70 Kilowatts Plate Dissipation



Federal means longer tube life, finer performance, greater satisfaction, greater value for your tube dollar.



Kovar-to-glass seals throughout and heavy wall anode contribute to the electrical and mechanically rugged structure of the F-5918-A

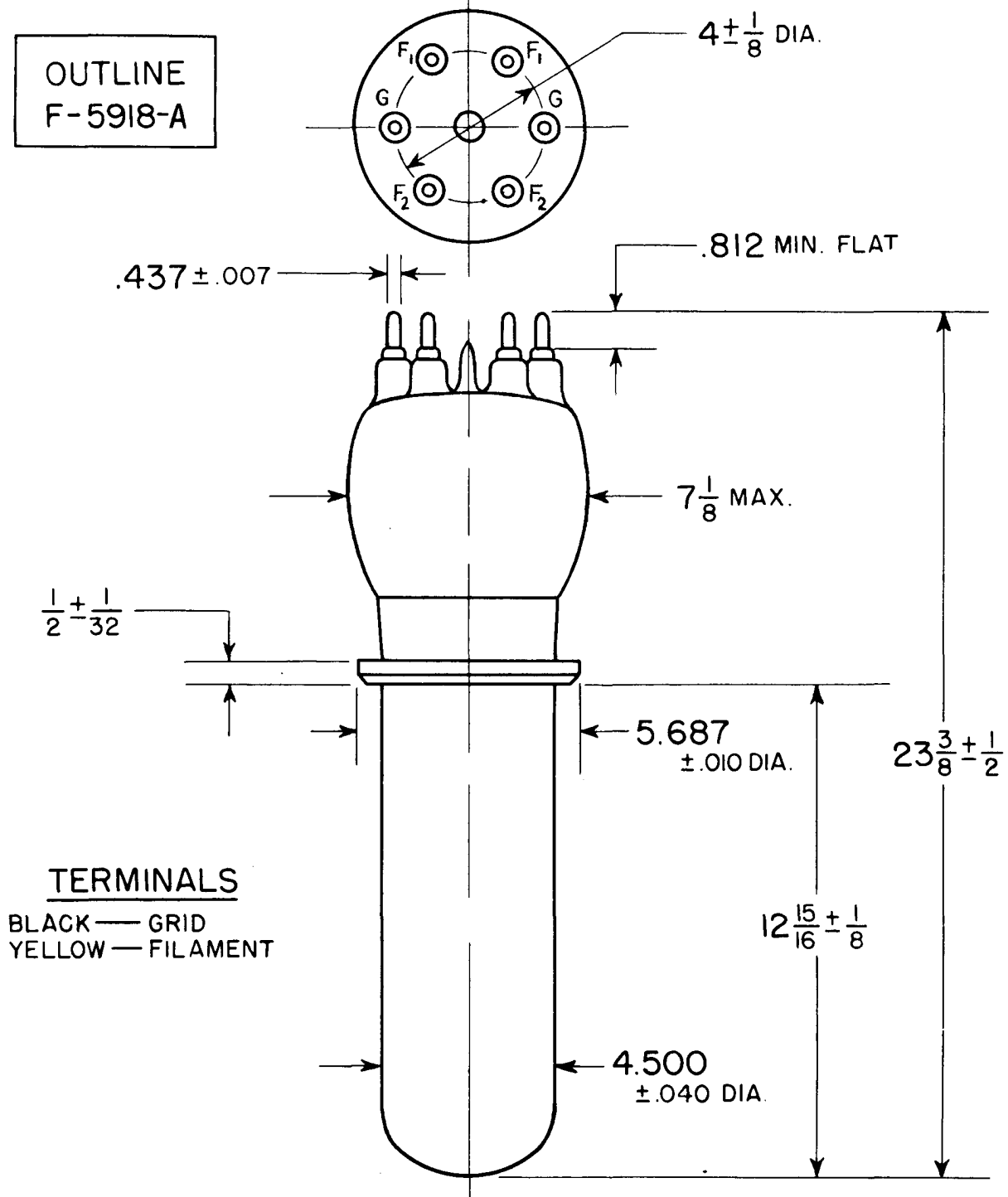
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Type F-5918-A

70 Kilowatts Plate Dissipation



OUTLINE
F-5918-A



TERMINALS

BLACK — GRID
YELLOW — FILAMENT

Federal Telephone and Radio Company

100 Kingsland Road VACUUM TUBE DEPARTMENT Clifton, New Jersey



**Federal Always Has
Made Better Tubes**