

FEDERAL POWER TRIODE

Type F-895

40 Kilowatts Plate Dissipation



GENERAL DATA

DESCRIPTION:

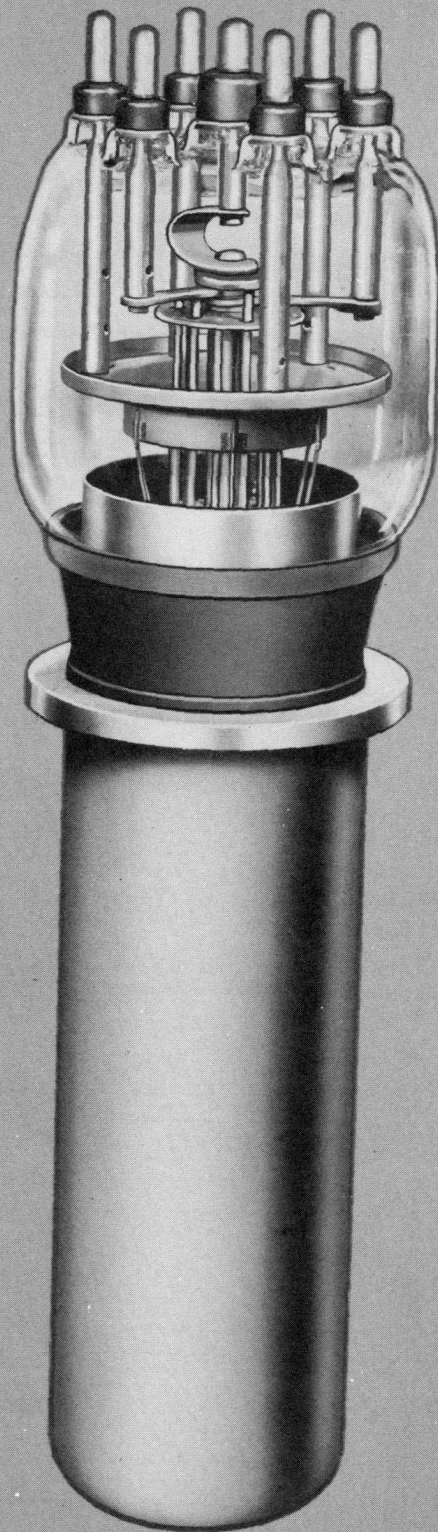
The F-895 is a three electrode tube, designed for use as a radio-frequency amplifier, oscillator, or Class B modulator. The anode, water-cooled, is capable of dissipating 40 kilowatts. The cathode is a pure tungsten filament, operated on three-phase, alternating current excitation. Maximum rating apply up to 6 megacycles, and operation is permissible up to 25 megacycles at reduced ratings.

Electrical:

▶ Filament Voltage, to Neutral	19 Volts
▶ Filament Current, per Phase	138 Amperes
▶ Filament Starting Current	210 Amperes max.
▶ Filament Cold Resistance	.013 Ohms
▶ Peak Cathode Current	62 Amperes
▶ Amplification Factor, at $E_c = -200V$ $I_b = 1.6A$	37
▶ Interelectrode Capacitances	
Grid-Plate	40 $\mu\mu f$
Grid-Filament	80 $\mu\mu f$
Plate-Filament	8 $\mu\mu f$

Mechanical:

▶ Mounting Position—	
Vertical, anode down	
▶ Type of Cooling—Water and Forced Air	
Minimum Water Flow on	
Anode	25 GPM.
Maximum Outgoing Water	
Temperature	70° C
Maximum Glass Temperature	150° C
Air Flow on Grid and	
Filament Terminals	5 CFM.
▶ Net Weight, approximate	25 Pounds



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Maximum Ratings vs. Operating Frequency

Frequency	6	12	25 Megacycles
Percentage of Maximum Rated Plate Voltage and Plate Input			
Class C—Plate Modulated	100	90	81 Per Cent
Class C—Unmodulated	100	85	70 Per Cent

Maximum Ratings and Typical Operating Conditions

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum Ratings, Absolute Values

DC Plate Voltage	17,000	Volts
Maximum Signal DC Plate Current†	9	Amperes
Maximum Signal Plate Input†	100	Kilowatts
Plate Dissipation†	40	Kilowatts

Typical Operation

(Unless otherwise specified, values are for two tubes)

DC Plate Voltage	10,000	10,000	Volts
DC Grid Voltage	—200	—200	Volts
Peak A-F Grid-to-Grid Voltage	800	1200	Volts
Zero Signal DC Plate Current	2.0	2.0	Amperes
Maximum Signal DC Plate Current	5.1	11.5	Amperes
Effective Load Resistance, Plate to Plate	3600	2100	Ohms
Maximum Signal Driving Power, approximate	75	600	Watts
Maximum Signal Power Output, approximate	30	70	Kilowatts

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

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

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

Maximum Ratings, Absolute Values

DC Plate Voltage	17,000	Volts
DC Grid Voltage	—3,000	Volts
DC Plate Current	9	Amperes
DC Grid Current	1.5	Amperes
Plate Input	140	Kilowatts
Plate Dissipation	40	Kilowatts

Typical Operation

DC Plate Voltage	10,000	17,000	Volts
DC Grid Voltage	—1,000	—1,000	Volts
Peak R-F Grid Voltage	1,700	1,700	Volts
DC Plate Current	7.15	7.5	Amperes
DC Grid Current, approximate	1.2	1	Ampere
Driving Power, approximate	1.9	1.7	Kilowatts
Power Output, approximate	50	100	Kilowatts

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

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

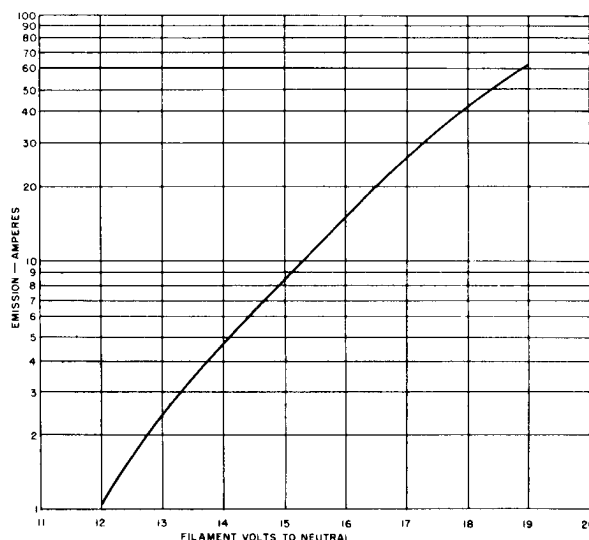
(Carrier conditions per tube for use with a maximum modulation factor of 1.0)

Maximum Ratings, Absolute Values

DC Plate Voltage	12,500	Volts
DC Grid Voltage	—3,000	Volts
DC Plate Current	9	Amperes
DC Grid Current	1.5	Amperes
Plate Input	70	Kilowatts
Plate Dissipation	40	Kilowatts

Typical Operation

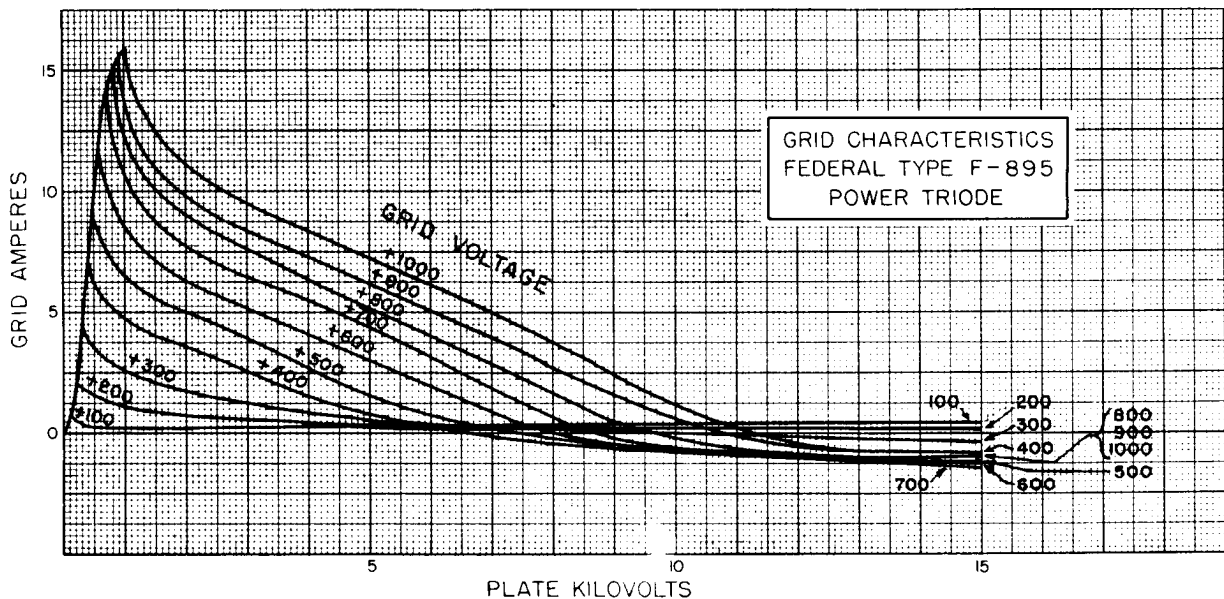
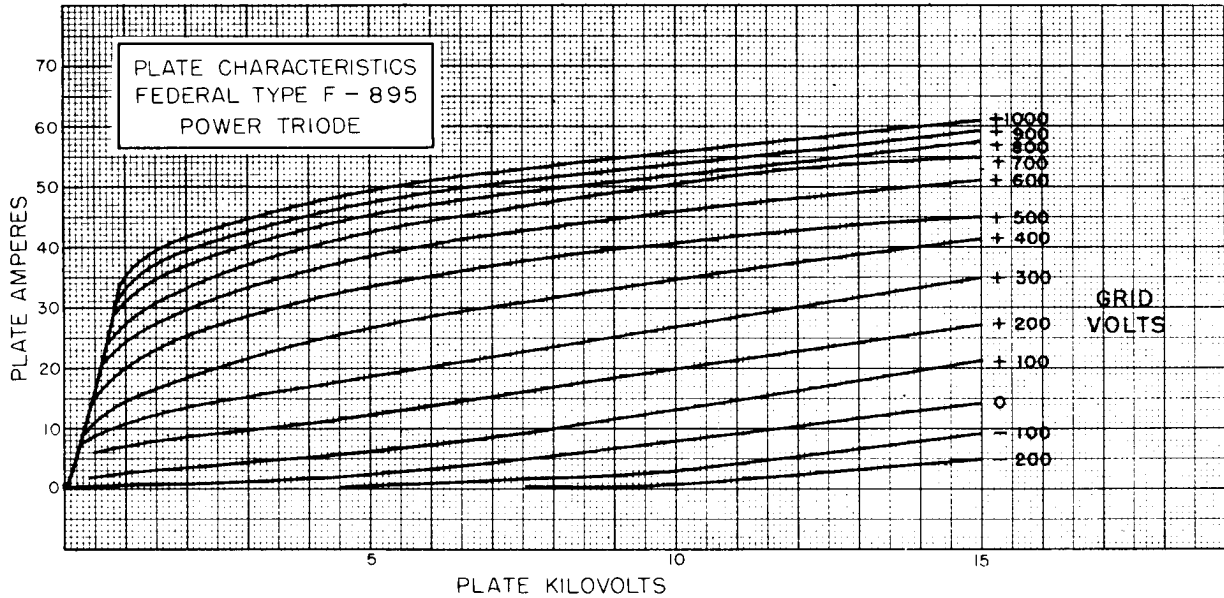
DC Plate Voltage	10,000	Volts
DC Grid Voltage	—1,500	Volts
Peak R-F Grid Voltage	2,000	Volts
DC Plate Current	3.35	Amperes
DC Grid Current, approximate	0.75	Amperes
Driving Power, approximate	1.3	Kilowatts
Power Output, approximate	25	Kilowatts



Filament Emission Characteristics
Federal Type F-895 Power Triode

Federal's engineers are ready to consult with you on the application of Federal tubes to your design. No obligation for consultation.

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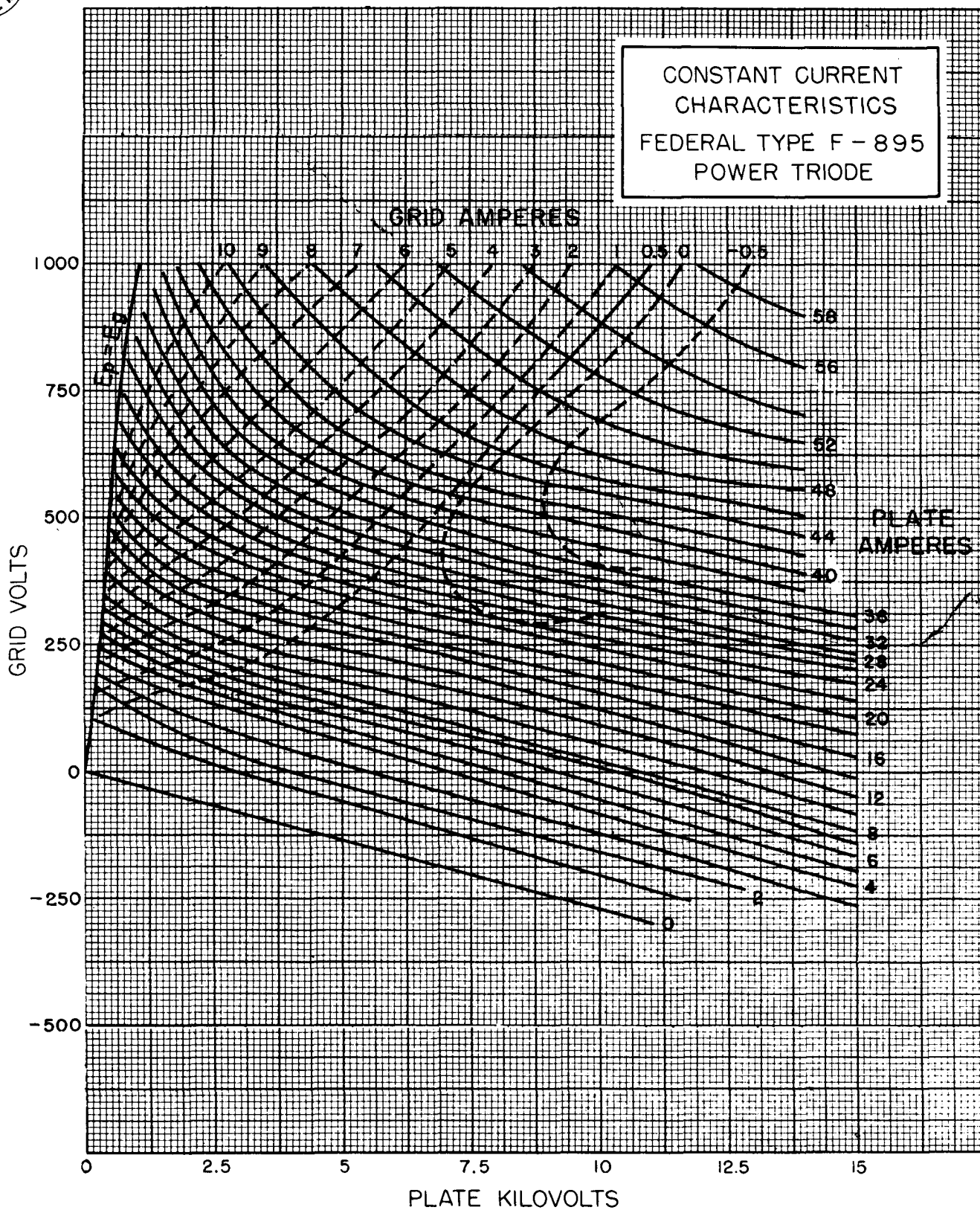
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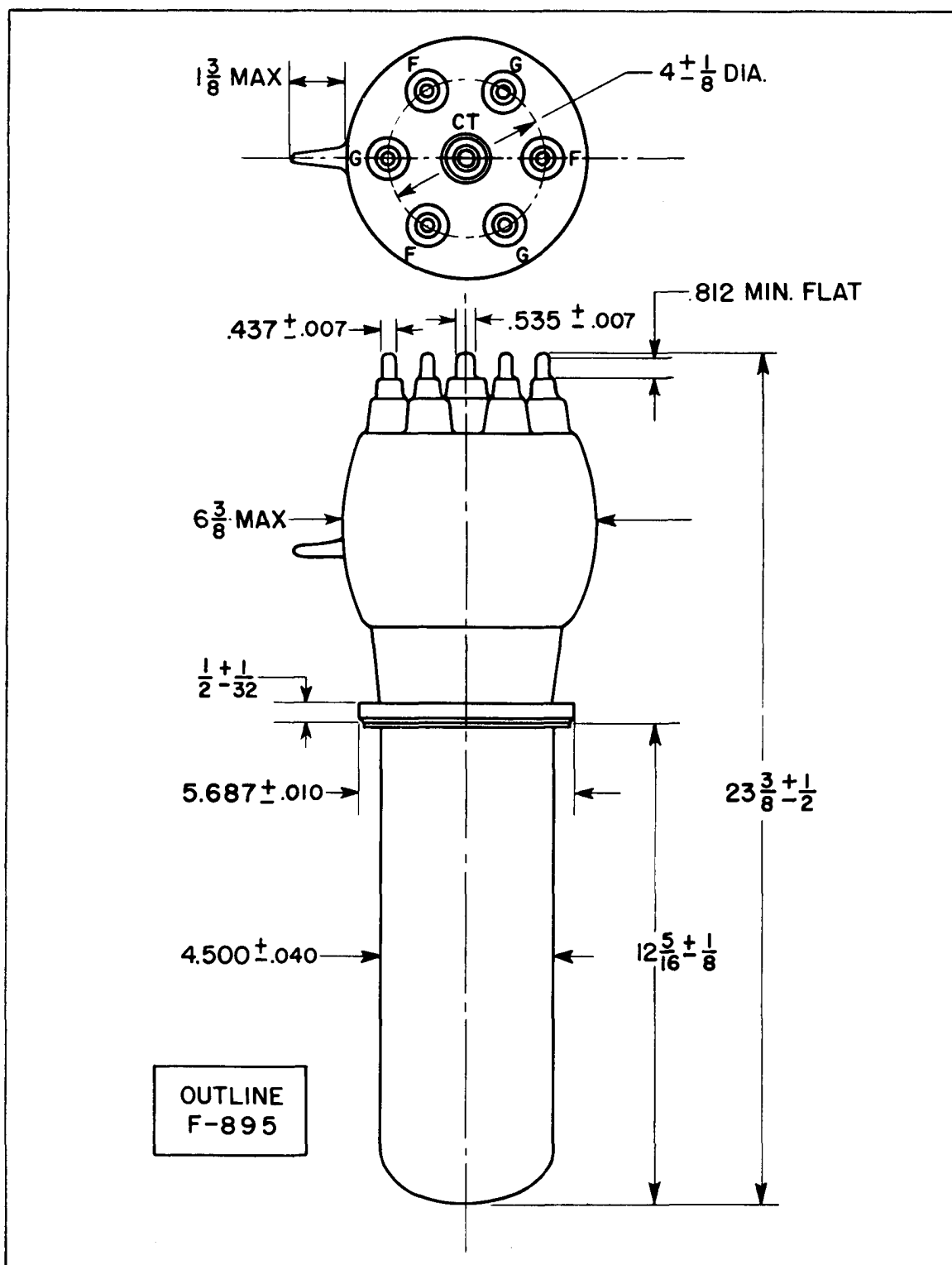


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Federal's *Handbook of Tube Operation* offers a wealth of technical information on tubes—their characteristics, functions, applications. Write for your free copy.

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Federal Telephone and Radio Corporation

100 Kingsland Road

Clifton, New Jersey





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