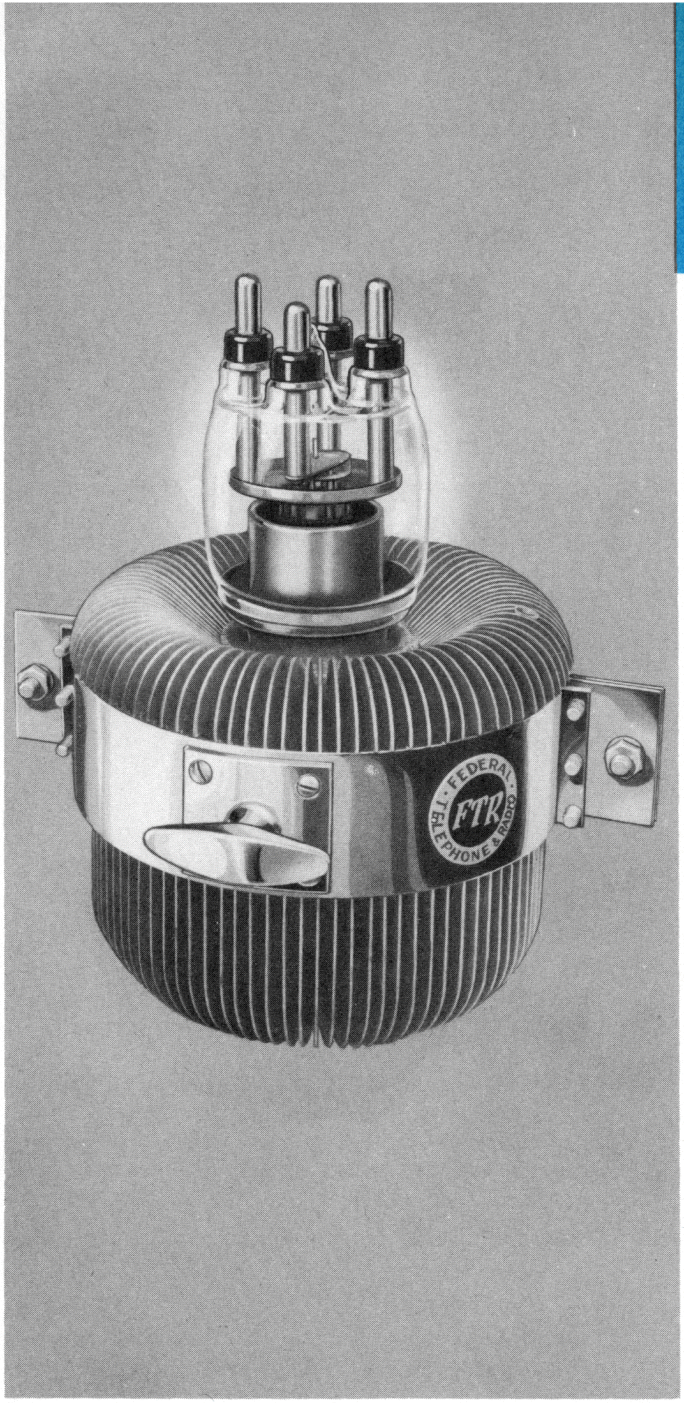
FEDERAL POWER TRIODE
Type F-5667
7.5 Kilowatts Plate Dissipation



Federal's advanced techniques of design and processing are vital factors in achieving the superiority of F-5667 performance . . . as a radio frequency amplifier, oscillator, Class B modulator or as a replacement for the Type 889-RA in communications equipment.

GENERAL DATA

DESCRIPTION:

Federal's Type F-5667 is a three-electrode tube designed for use as a radio-frequency amplifier, oscillator, or Class B modulator. It is ruggedly constructed to meet the severe conditions of radio-frequency heating service. This special feature contributes to a superior performance when the F-5667 is used as a replacement for the Type 889-RA in communications equipment. The heavy wall anode is forced-air cooled, capable of dissipating 7.5 kilowatts. The cathode is a pure tungsten filament. Maximum ratings apply up to 22.5 megacycles. Operation at 50 megacycles is permissible with plate voltage and input reduced to one-half maximum ratings.

Electrical:

Filament Voltage	11.0 Volts
Filament Current	120 Amperes
Filament Starting Current	180 Amperes max.
Peak Cathode Current	7.5 Amperes
Filament Cold Resistance	.0083 Ohms
Amplification Factor, Ib = 1.0 Amp.; Ec = −100 Volts	21
Interelectrode Capacitances	
Grid-Plate	18.5 $\mu\mu$f
Grid-Filament	23.3 $\mu\mu$f
Plate-Filament	3.0 $\mu\mu$f

Mechanical:

Mounting Position— Vertical, Anode Down				
Type of Cooling—Forced Air				
Maximum Incoming Air Temperature				45° C
Required Air Flow on Anode Plate Dissipation—				
Kilowatts	7.5	6.0	4.5	
Air Flow—CFM	550	400	300	
Static Pressure— Inches Water	0.7	0.4	0.2	
Maximum Anode Temperature				230° C
Required Air Flow on Bulb*				30 CFM
Maximum Glass Temperature				160° C
Net Weight, approx.				40 Pounds

*Operation at frequencies above 15 Mc/sec. may require air-flow on the dish center in order to hold the temperature of the seals and dish below 160°C. This flow may be obtained by deflection of the anode cooling air, or by means of a separate blower supplying 30 C.F.M. through a 3" nozzle.

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Federal's F-5667 is designed and engineered to meet the specific requirements of the makers of RF heating equipment.

Maximum Ratings and Typical Operating Conditions

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum Ratings

DC Plate Voltage	10,000 Volts
Max. Signal DC Plate Current**	2 Amperes
Max. Signal Plate Input**	16 Kilowatts
Plate Dissipation**	7.5 Kilowatts

Typical Operation

(Unless otherwise specified, values are for 2 tubes)

DC Plate Voltage	7,500 Volts
DC Grid Voltage	—300 Volts
Peak A-F Grid to Grid Voltage	1,700 Volts
Zero Signal DC Plate Current	0.4 Amperes
Maximum Signal DC Plate Current	3.2 Amperes
Effective Load Resistance (plate to plate)	5,000 Ohms
Maximum Signal Driving Power, approx.	150 Watts
Maximum Signal Power Output, approx.	15 Kilowatts

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

RADIO-FREQUENCY POWER AMPLIFIER —CLASS B TELEPHONY

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

Maximum Ratings

DC Plate Voltage	10,000 Volts
DC Plate Current	1.0 Ampere
Plate Input	10 Kilowatts
Plate Dissipation	7.5 Kilowatts

Typical Operation

DC Plate Voltage	9,000 Volts
DC Grid Voltage	—350 Volts
Peak R-F Grid Voltage	450 Volts
DC Plate Current	0.8 Ampere
Driving Power, approx.†	110 Watts
Power Output, approx.	2.5 Kilowatts

†At crest of a-f 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

DC Plate Voltage	8,000 Volts
DC Grid Voltage	—1,500 Volts
DC Plate Current	1.0 Ampere
DC Grid Current	0.35 Ampere
Plate Input	8 Kilowatts
Plate Dissipation	5 Kilowatts

Typical Operation

DC Plate Voltage	6,000	7,500 Volts
DC Grid Voltage	—900	—1,200 Volts
Peak R-F Grid Voltage	1,420	1,700 Volts
DC Plate Current	1.0	.88 Ampere
DC Grid Current, approx.	0.1	.08 Ampere
Driving Power, approx.	140	140 Watts
Power Output, approx.	4	5 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	10,000 Volts
DC Grid Voltage	—1,500 Volts
DC Plate Current	2.0 Amperes
DC Grid Current	0.35 Amperes
Plate Input	20 Kilowatts
Plate Dissipation	7.5 Kilowatts

Typical Operation

DC Plate Voltage	6,000	7,500	9,000 Volts
Filament Voltage	10.6	10.7	10.8 Volts
DC Grid Voltage	—500	—600	—750 Volts
Peak R-F Grid Voltage	1,200	1,400	1,700 Volts
DC Plate Current	1.6	1.8	2.0 Amperes
DC Grid Current, approx.	.19	.20	.21 Amperes
Driving Power, approx.	220	270	340 Watts
Power Output, approx.	6.3	8.9	12.2 Kilowatts

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

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When interchanged with the 889-RA in communications equipment, Federal's F-5667 brings a finer, newer performance.

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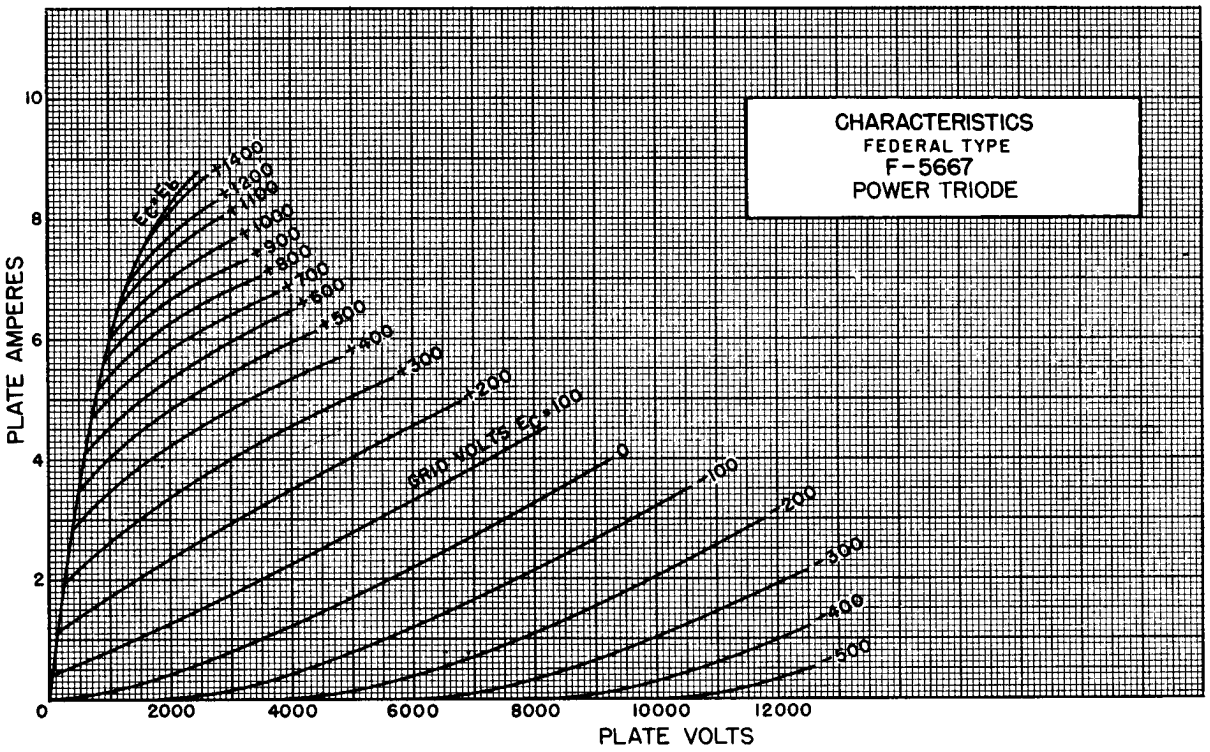

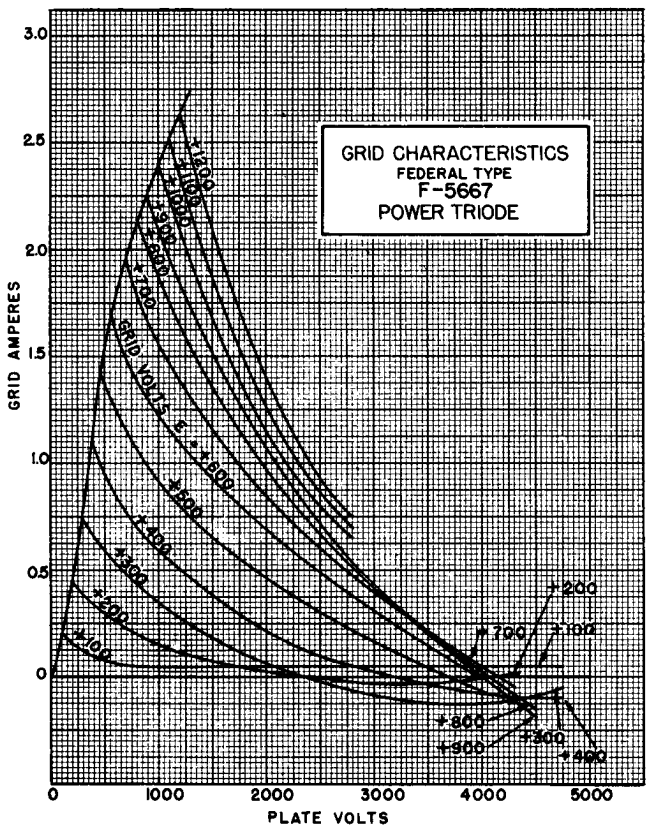

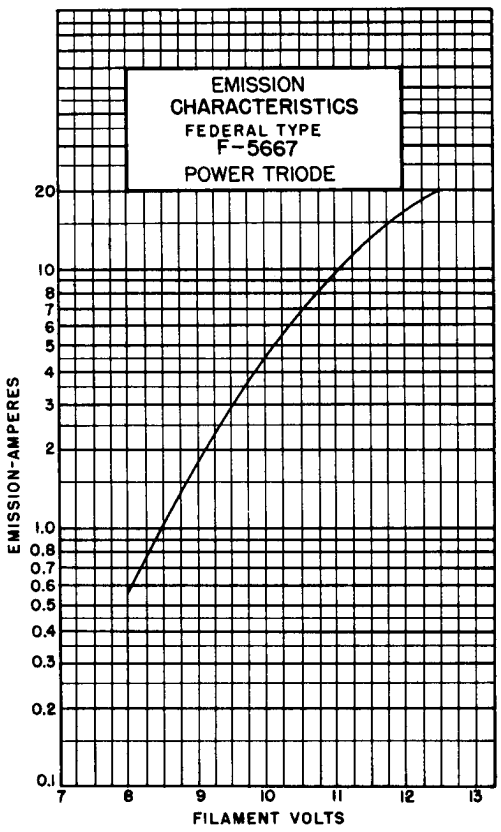

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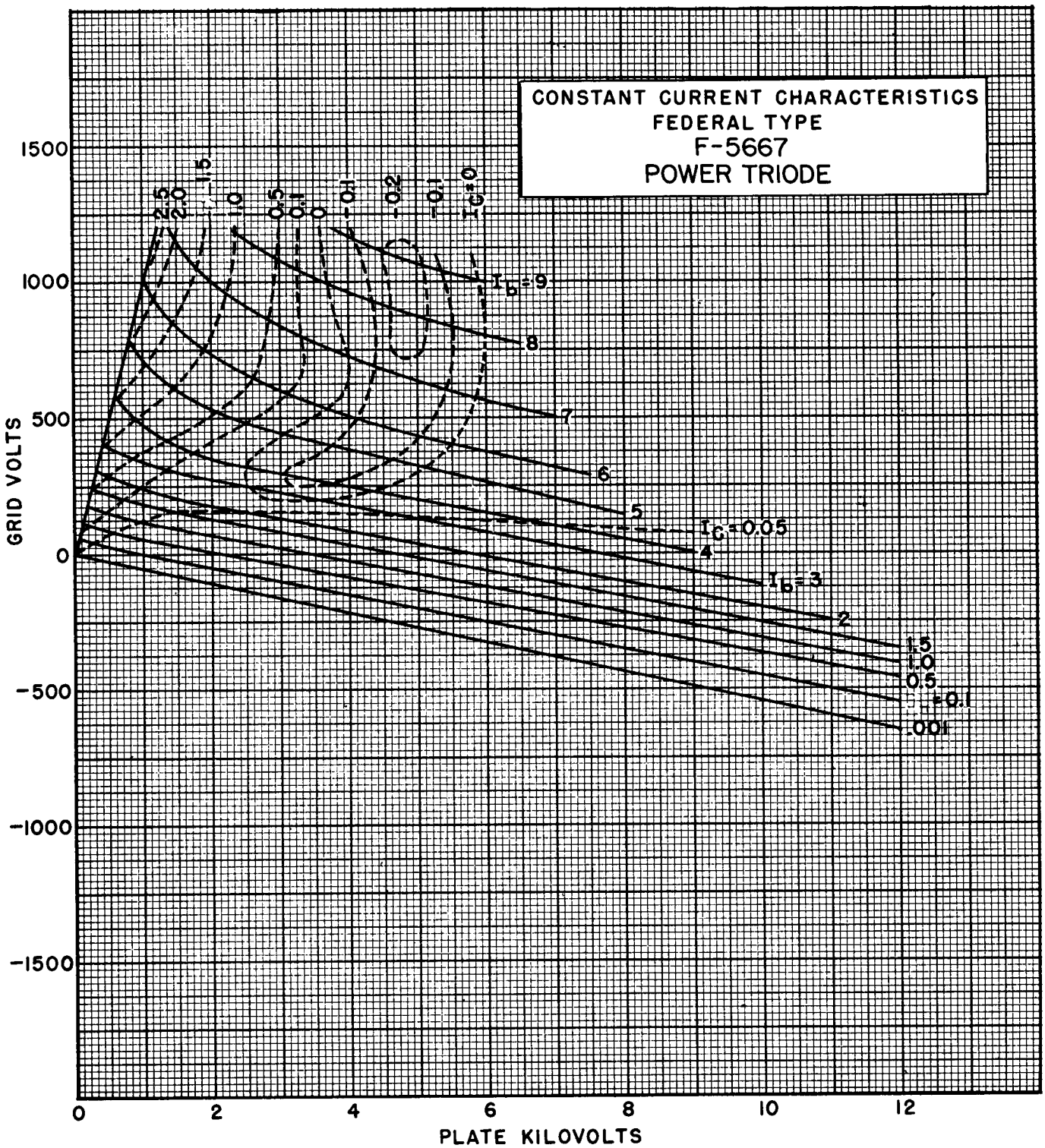
Federal's F-5667 is built to "stand-up" on the job, to absorb the wear and tear of a long service life.



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Kovar-to-glass seals are used throughout the F-5667 contributing to the over-all ruggedness of Federal construction.

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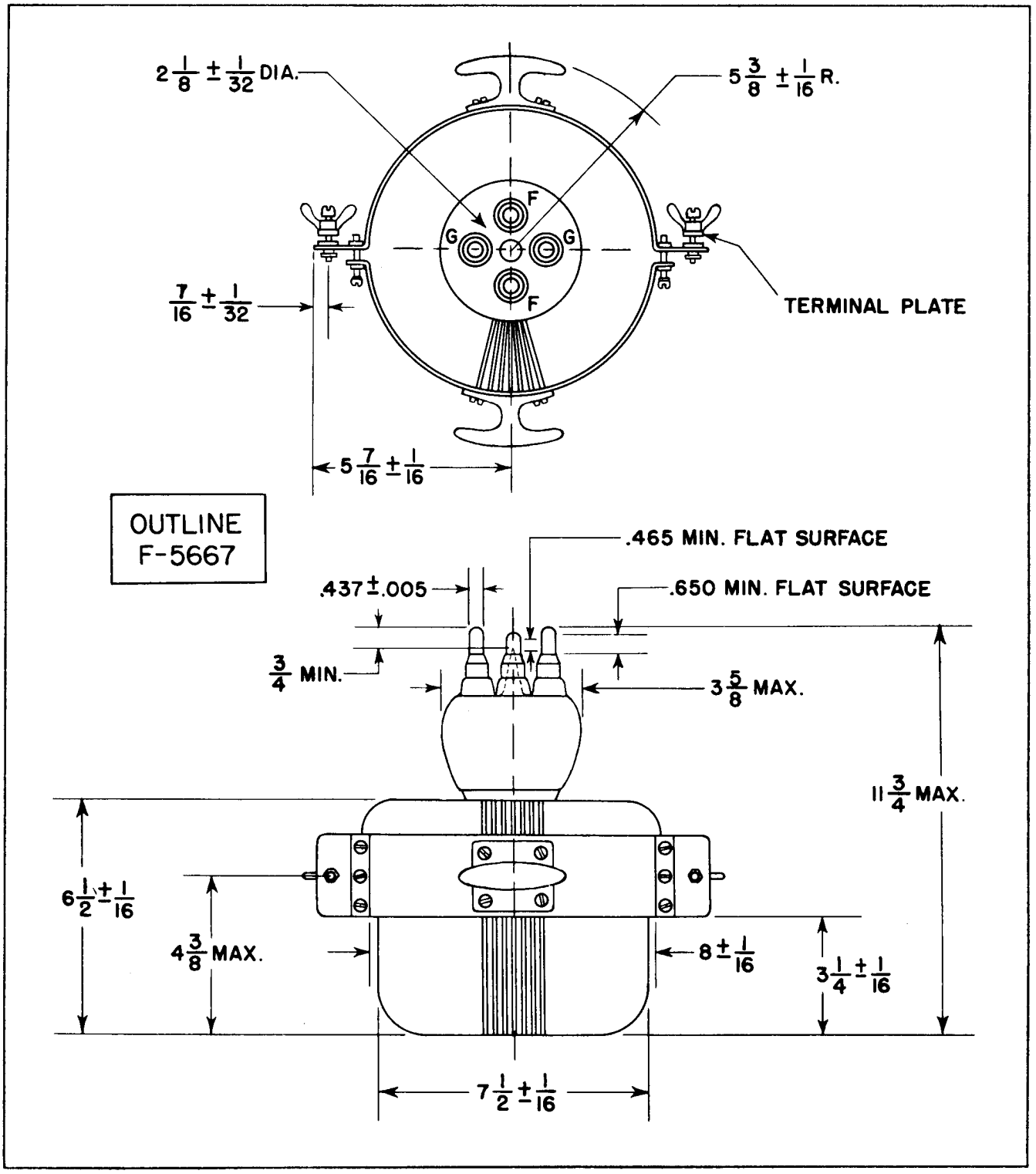

Federal Telephone and Radio Company
100 Kingsland Road Clifton, New Jersey

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Federal Always Has
Made Better Tubes

Form FJ-416 Printed in U. S. A.