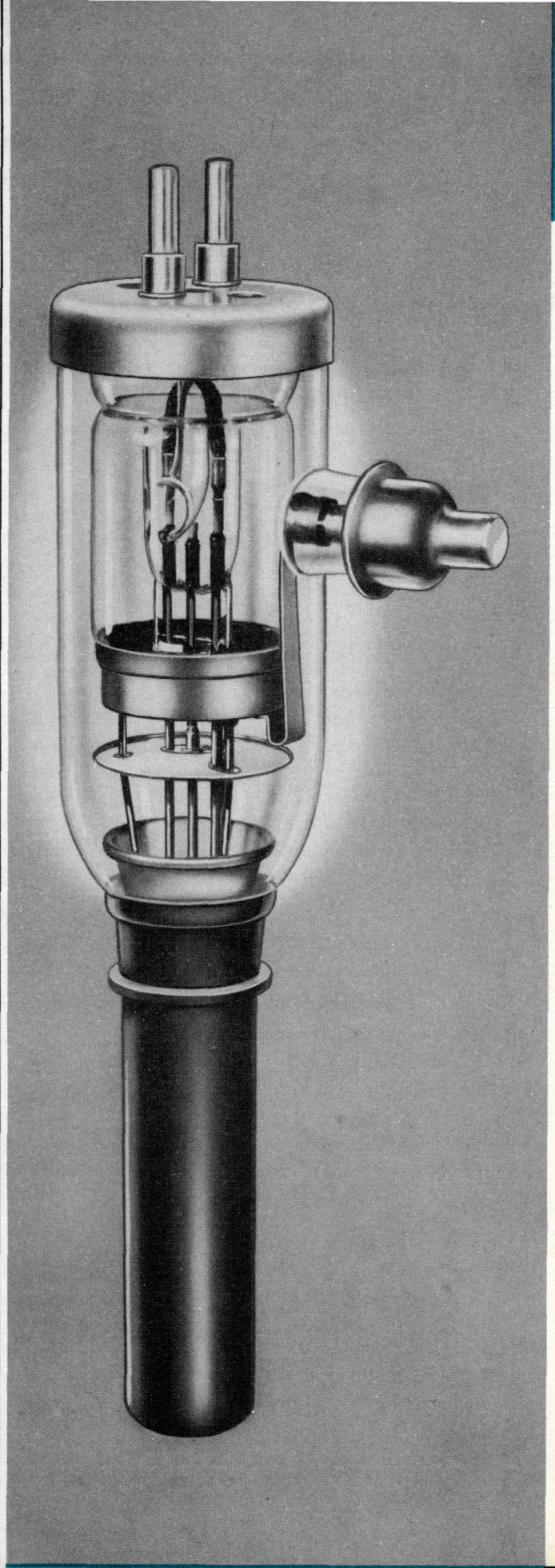

FEDERAL POWER TRIODE
Type F-342-A
25 Kilowatts Plate Dissipation

GENERAL DATA

DESCRIPTION:

Federal's F-342-A 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 25 kilowatts. The cathode is a pure tungsten filament. Maximum ratings apply up to 4 megacycles. Operation up to 16 megacycles is permissible if the plate voltage and input are reduced to 50% of maximum.

Electrical:

Filament Voltage	20	Volts
Filament Current	71	Amperes
Filament Starting Current	142	Amperes max.
Filament Cold Resistance	0.021	Ohm
Peak Cathode Current	13.5	Amperes
Amplification Factor, at $E_c = -200V$ $I_b = 0.75A$	40	
Interelectrode Capacitances		
Grid-Plate	25	$\mu\mu f$
Grid-Filament	19	$\mu\mu f$
Plate-Filament	2.5	$\mu\mu f$

Mechanical:

Mounting Position— Vertical, anode down		
Type of Cooling—Water		
Minimum Water Flow on Anode	10	GPM
Maximum Outgoing Water Temperature	70°	C
Maximum Glass Temperature	150°	C
Net Weight, approximate	4	Pounds

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Buyers who specify "Federal" because they want *long-lived* tubes, know from experience they'll get what they want.

Maximum Ratings and Typical Operating Conditions

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum Ratings, Absolute Values

DC Plate Voltage	20,000 Volts
Maximum Signal DC Plate Current†	3 Amperes
Maximum Signal Plate Input†	50 Kilowatts
Plate Dissipation†	25 Kilowatts

Typical Operation

(Unless otherwise specified, values are for two tubes)

DC Plate Voltage	15,000 Volts
DC Grid Voltage	—200 Volts
Peak A-F Grid-to-Grid Voltage	1,700 Volts
Zero Signal DC Plate Current	0.8 Ampere
Maximum Signal DC Plate Current	3.2 Amperes
Effective Load Resistance, Plate to Plate	9,600 Ohms
Maximum Signal Driving Power, approximate	200 Watts
Maximum Signal Power Output, approximate	30 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	20,000 Volts
DC Plate Current	2 Amperes
Plate Input	30 Kilowatts
Plate Dissipation	25 Kilowatts

Typical Operation

DC Plate Voltage	17,500 Volts
DC Grid Voltage	—430 Volts
Peak R-F Grid Voltage	760 Volts
DC Plate Current	1.55 Amperes
DC Grid Current, approximate	0.0 Amperes
Driving Power, approximate‡	30 Watts
Power Output, approximate	8.25 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	—5,000 Volts
DC Plate Current	1.5 Amperes
DC Grid Current	0.3 Ampere
Plate Input	20 Kilowatts
Plate Dissipation	15 Kilowatts

Typical Operation

DC Plate Voltage	12,500 Volts
DC Grid Voltage	—750 Volts
Peak R-F Grid Voltage	1,400 Volts
DC Plate Current	1 Ampere
DC Grid Current, approximate	0.05 Ampere
Driving Power, approximate	75 Watts
Power Output, approximate	10 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	20,000 Volts
DC Grid Voltage	—5,000 Volts
DC Plate Current	3 Amperes
DC Grid Current	0.3 Ampere
Plate Input	50 Kilowatts
Plate Dissipation	25 Kilowatts

Typical Operation

DC Plate Voltage	18,000 Volts
DC Grid Voltage	—1,000 Volts
Peak R-F Grid Voltage	2,300 Volts
DC Plate Current	2.6 Amperes
DC Grid Current, approximate	0.1 Ampere
Driving Power, approximate	200 Watts
Power Output, approximate	35 Kilowatts

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

AN IT&T ASSOCIATE

Federal's name on a tube signifies the best in design, engineering, materials, components and craftsmanship.

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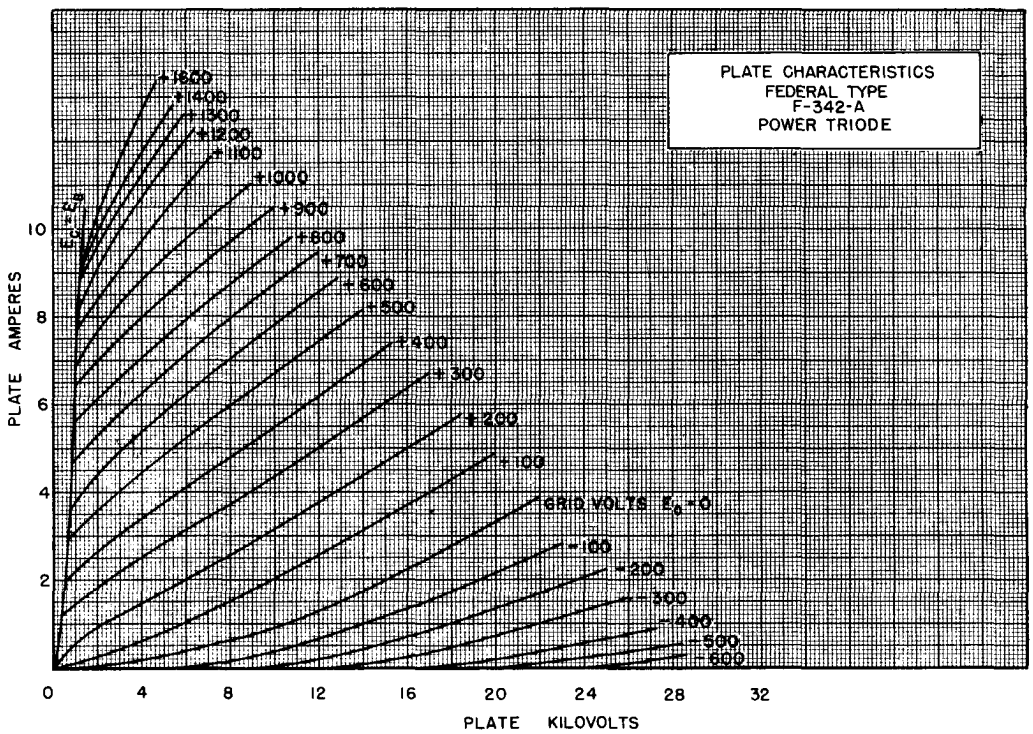
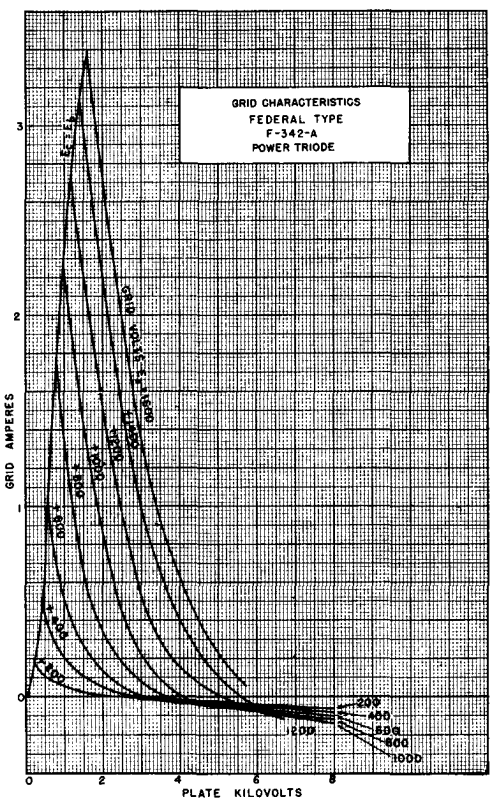
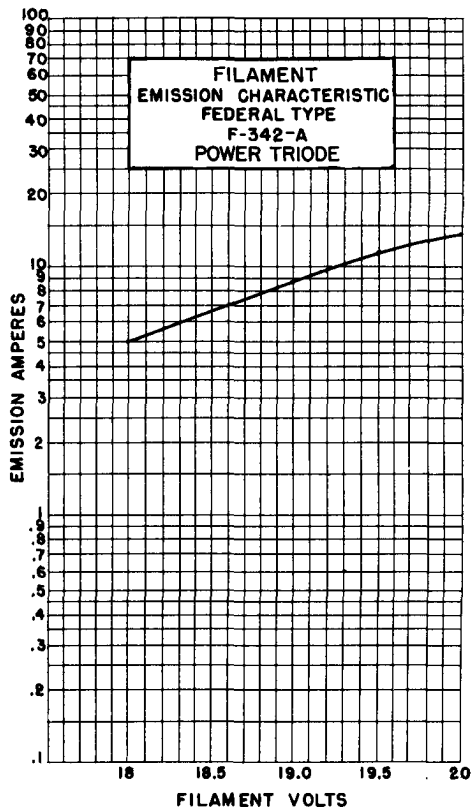
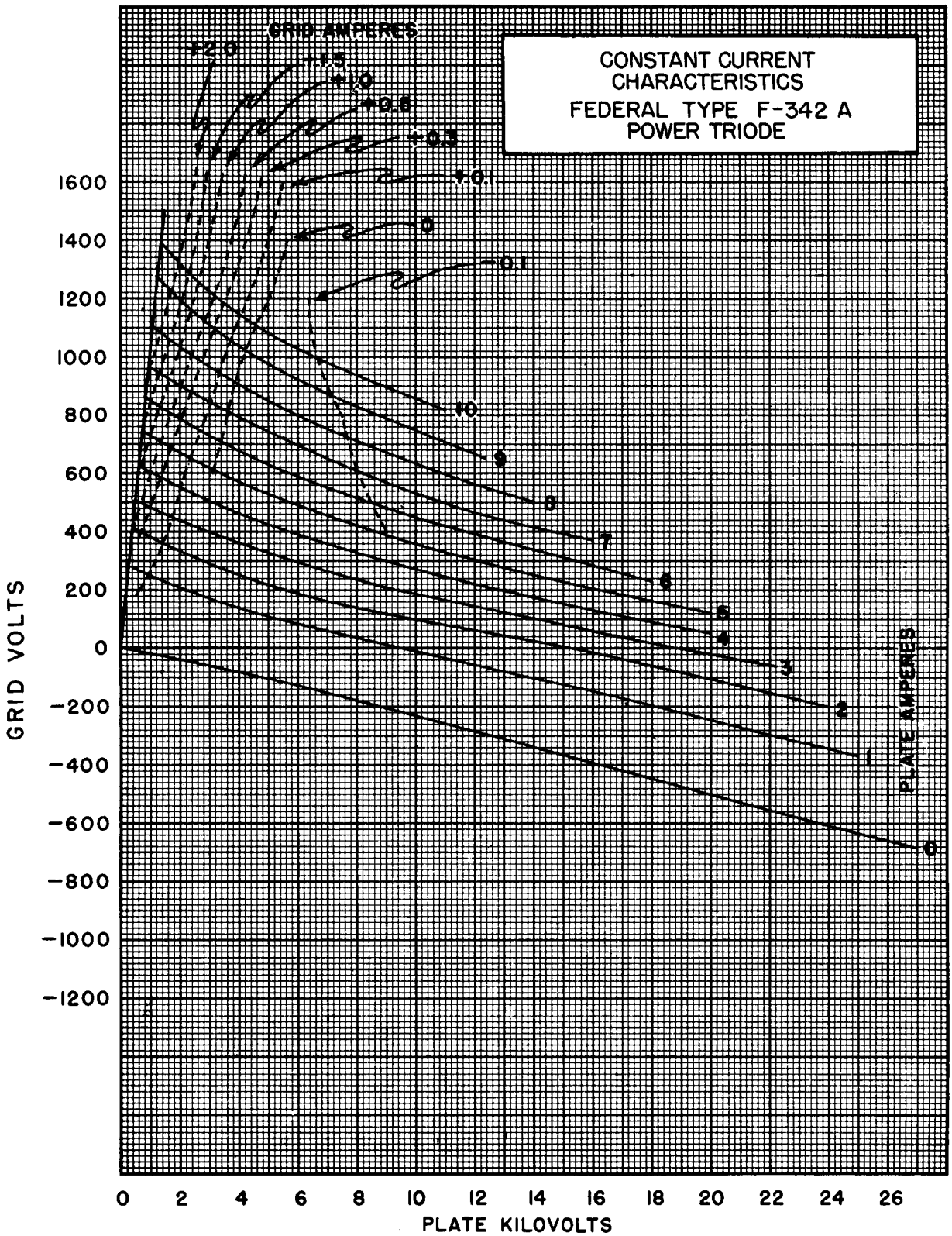






FEDERAL POWER TRIODE
Type F-342-A
25 Kilowatts Plate Dissipation

Federal always has made *first-quality* tubes, and the record goes back for more than 40 years.



That Federal tubes, by their performance, largely sell themselves, is a tribute to the product and to the manufacturer.

FEDERAL POWER TRIODE
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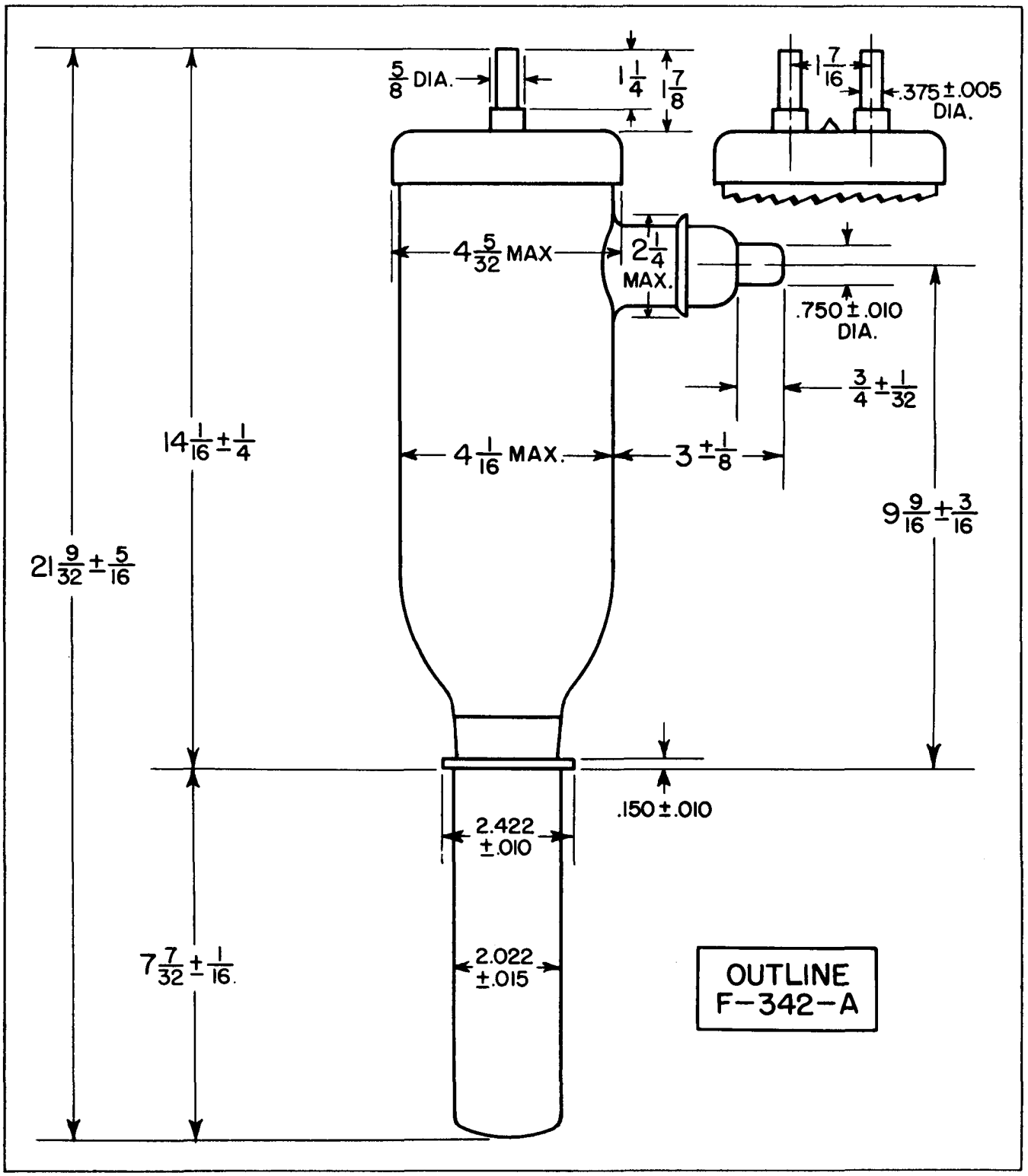
25 Kilowatts Plate Dissipation



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

When you are developing projects wherein tubes are components, consult Federal's engineers, let them advise and assist you . . . no obligation is incurred.

Over the years, hundreds of manufacturers, designers, technicians have taken advantage of this Federal service . . . with benefit both to their products and services.

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