ITT ELECTRON TECHNOLOGY
P.O. Box 100
Easton, Pennsylvania 18044-0100
Telephone 215 252-7331

F-8550
POWER TRIODE

DESCRIPTION

The F-8550 is a general purpose triode designed for use as a radio-frequency amplifier, oscillator, or Class B modulator under CW or pulsed conditions. The forced-air cooled copper anode-radiator assembly of brazed construction is unusually light and compact for its CW rating of 45 kilowatts. The cathode is a thoriated tungsten filament and requires three phase wye filament excitation. The anode ratings apply up to 22 megacycles.

ELECTRICAL

Filament Voltage	11	volts line-to-line
Filament Current	190	Amperes per phase
Filament Starting Current	600	Amperes per phase
Filament Cold Resistance	.008	Ohms line-to-line
Peak Cathode Current (Note 1)	100	Amperes
Amplification Factor @ E_c = -200V; I_b = 2 amperes	41	
Direct Interelectrode Capacitance		
Grid-Plate	37	µµf
Grid-Filament	75	µµf
Plate-Filament	2.0	µµf

Note 1: Represents maximum usable cathode current (plate current plus grid current) for any CW condition of operation.

MECHANICAL

Mounting Position	Vertical, Anode Down			
Type of Cooling	Forced Air			
Plate Dissipation	45	35	25	Kilowatts
Air Flow*	1700	1100	800	cfm
Pressure	6.5	2.7	1.2	" of Water
Maximum Incoming Air Temperature	50	50	50	°C
Maximum Glass & Seal Temperature**			180	°C
Net Weight (Approximate)			52	Pounds

*Using Air Distribution RT-55397.

**Operation of frequencies above 2 mc may require air flow onto the dish center in order to hold the temperature of the seals and dish below 180°C.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Audio-Frequency Power Amplifier and Modulator - Class B

Maximum Ratings, Absolute Values

DC Plate Voltage	19,500	Volts
Maximum Signal DC Plate Current¶	9.0	Amperes
Plate Dissipation¶	45	Kilowatts

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

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	2.0	Amperes
Maximum Signal DC Plate Current	16	Amperes
Effective Load Resistance Plate-to-Plate	2,250	Ohms
Maximum Signal Driving Power (Approx.)	1,500	Watts
Maximum Signal Power Output (Approx.).	150	Kilowatts

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	1.5	Amperes
Plate Dissipation	30	Kilowatts

Typical Operation

DC Plate Voltage	14,000	Volts
DC Grid Voltage	-800	Volts
Peak RF Grid Voltage	1,550	Volts
DC Plate Current	10	Amperes
DC Grid Current	1.4	Amperes
Driving Power (Approximate)	2.0	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	15	Amperes
DC Grid Current	1.5	Amperes
Plate Dissipation	45	Kilowatts

Typical Operation

DC Plate Voltage	14,500	Volts
DC Grid Voltage	-2,250	Volts
Peak RF Grid Voltage	3,200	Volts
DC Plate Current	8.25	Amperes
DC Grid Current (Approximate)	1.45	Amperes
Driving Power (Approximate)	5.0	Kilowatts
Power Output (Approximate)	90	Kilowatts

***Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115% of carrier conditions.

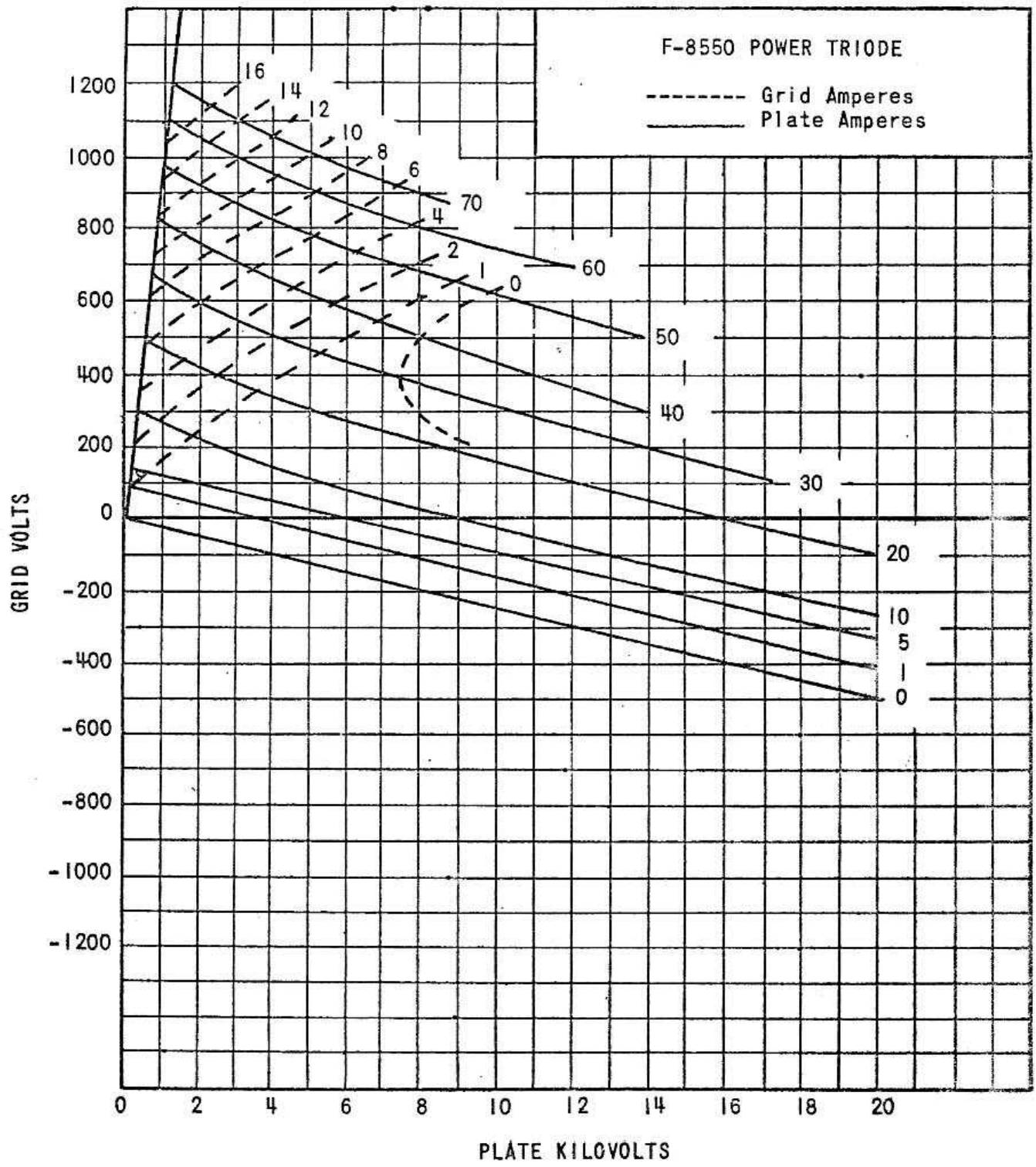
Maximum Ratings Versus Operating Efficiency

Frequency	2.0	22	30	Megacycles
Percentage of Maximum Rated Plate Voltage and Plate Input				
Class B	100	100	80	Percent
Class C Plate Modulated	100	100	80	Percent
Class C Unmodulated	115	100	80	Percent

Additional information for specific applications can be obtained from:

ITT ELECTRON TECHNOLOGY DIVISION
Applications Department
P.O. Box 100
Easton, Pennsylvania 18044-0100

CONSTANT CURRENT CHARACTERISTICS



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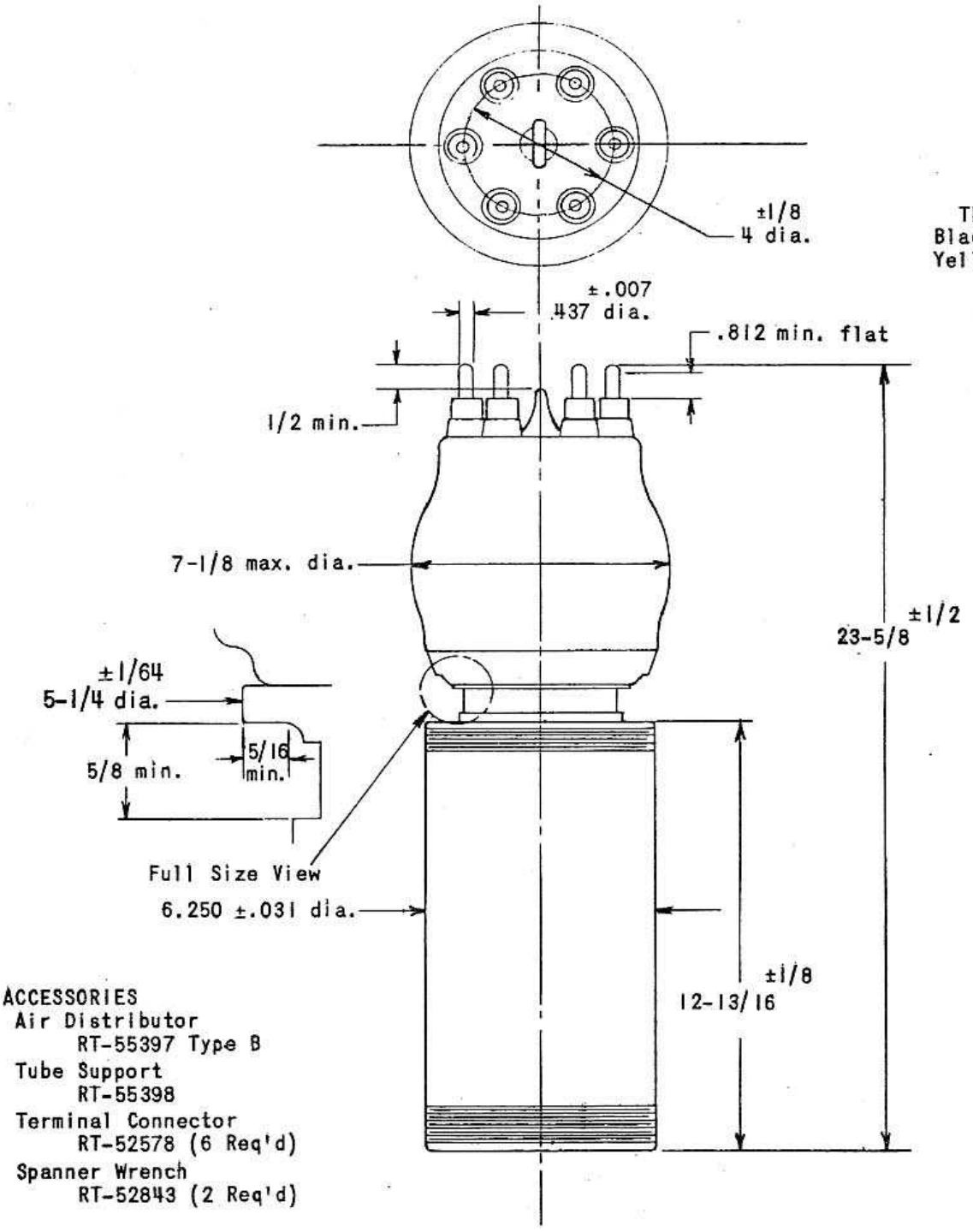
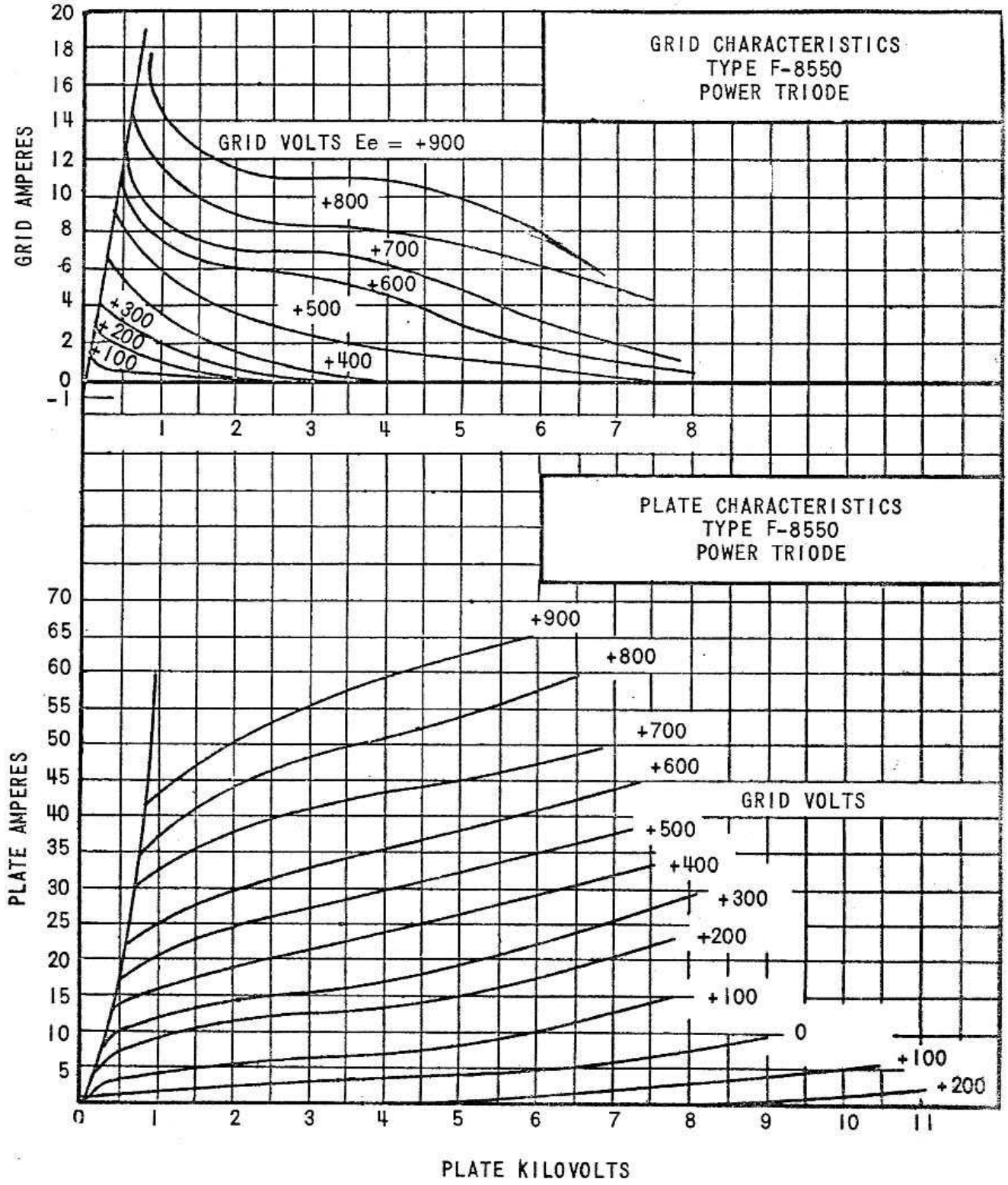


ACCESSORIES
Air Distributor
RT-55397 Type B
Tube Support
RT-55398
Terminal Connector
RT-52578 (6 Req'd)
Spanner Wrench
RT-52843 (2 Req'd)



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