



ELECTRONIC TUBE REFERENCE

F6803

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Massive high-mu ITT power triode for high-power RF and Class B service. Approximately 70 kW plate dissipation, 19 kV capability, and very high plate current support enormous transmitter or modulator power.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	11 V / 190 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	40
MAXIMUM PLATE VOLTAGE	19000 V
MAXIMUM PLATE DISSIPATION	70000 W
MAXIMUM CATHODE CURRENT	100 A
<i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i>	

Three-electrode power tube for radio-frequency amplifier, oscillator, or Class B modulator service. The water-cooled anode is rated for 70 kW continuous-commercial-service dissipation.

SOURCE OPERATING CONDITIONS

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1962 ITT

Published test conditions and operating points. Values on this page are preserved as reported by this source.

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Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The F	6803	The F-6803 is a three electrode tube designed for use as a radio frequency
Service., The cathode	1	Service., The cathode 1s a thoriated tungsten filament of free hung de-
sign and filament excitation of	3	sign and filament excitation of 3 phase wye is required. Maximum ratings
Filament Voltage, line to line	110 V	Filament Voltage, line to line 11,0 volts
Filament Current, per phase	190 A	Filament Current, per phase 190 amperes
Filament Starting Current	600 A	Filament Starting Current 600 amperes
Filament Heating Time	15	Filament Heating Time 15 seconds
Peak Cathode Current, Note [1]	1 A	Peak Cathode Current, Note 1 100 amperes
Peak Cathode Current, Note [2]	100 A	Peak Cathode Current, Note 1 100 amperes
Grid-Plate	37	Grid-Plate 37 uuf
Grid-Filament	5	Grid-Filament 5 upf
Plate-Filament	2	Plate-Filament 2.0 ppuf
Water Flow on Anode	30	Water Flow on Anode 30 gpm
Glass Temperature (at hottest part)	180	Glass Temperature (at hottest part) 180 °C, max.
Note	1 A	Note 1: Represents maximum usable cathode current
POWER TRIODE	-2 W	POWER TRIODE -2-
D~C Plate Voltage	19000 V	D~C Plate Voltage 19,000 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max, Signal D-C Plate Current, Note [1]	3 A	Max, Signal D-C Plate Current, Note 3 90 amperes
Max, Signal D-C Plate Current, Note [2]	9 A	Max, Signal D-C Plate Current, Note 3 90 amperes
Max. Signal Plate Input, Note [1]	3	Max. Signal Plate Input, Note 3 150 kilowatts
Max. Signal Plate Input, Note [2]	150	Max. Signal Plate Input, Note 3 150 kilowatts
Plate Dissipation, Note [1]	3 W	Plate Dissipation, Note 3 70 kilowatts
Plate Dissipation, Note [2]	70 W	Plate Dissipation, Note 3 70 kilowatts
D-C Plate Voltage	14000 V	D-C Plate Voltage 14,000 volts
D-C Grid Voltage =	300 V	D-C Grid Voltage =300 volts
Peak A-F Grid-to-Grid Voltage	1600 V	Peak A-F Grid-to-Grid Voltage 1,600 volts
Zero Signal D-C Plate Current	2 A	Zero Signal D-C Plate Current 2 amperes
Max. Signal D-C Plate Current	16 A	Max. Signal D-C Plate Current 16 amperes
Effective Load Resistance, plate-to-plate	2250	Effective Load Resistance, plate-to-plate 2,250 ohms
Max. Signal Driving Power, approx	1500 W	Max. Signal Driving Power, approx. 1,500 watts
Max. Signal Power Output, approx	150 W	Max. Signal Power Output, approx. 150 kilowatts
D-C Plate Voltage, Note [1]	4 V	D-C Plate Voltage, Note 4 17,500 volts
D-C Plate Voltage, Note [2]	17500 V	D-C Plate Voltage, Note 4 17,500 volts
D-C Plate Current	7 A	D-C Plate Current 7 amperes
Plate Input	100	Plate Input 100 kilowatts
Note	3	Note 3: Averaged over any audio frequency cycle of sine-wave
Note [1]	4	Note 4: The tube may be operated up to 19,000 d-c plate volts
Note [2]	19000	Note 4: The tube may be operated up to 19,000 d-c plate volts
D-C Plate Voltage	15000 V	D-C Plate Voltage 15,000 volts
D-C Grid Voltage =	375 V	D-C Grid Voltage =375 volts
Peak R=F Grid Voltage	500 V	Peak R=F Grid Voltage 500 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D-C Plate Current	4.9 A	D-C Plate Current 4.9 amperes
D=C Grid Current	0 mA	D=C Grid Current 0.0 amperes
Driving Power, approx. Note [1]	5 W	Driving Power, approx. Note 5 770 watts
Driving Power, approx. Note [2]	770 W	Driving Power, approx. Note 5 770 watts
Power Output, approx	25 W	Power Output, approx. 25 kilowatts
D-C Grid Voltage	-3000 V	D-C Grid Voltage -3,000 volts
D-C Plate Current	12 A	D-C Plate Current 12 amperes
D-C Grid Current	1.5 A	D-C Grid Current 1.5 amperes
Plate Input	140	Plate Input 140 kilowatts
Plate Dissipation	7 W	Plate Dissipation 7 kilowatts
D-C Grid Voltage	-800 V	D-C Grid Voltage -800 volts
Peak R-F Grid Voltage	1550 V	Peak R-F Grid Voltage 1,550 volts
D-C Plate Current	10 A	D-C Plate Current 10 amperes
D-C Grid Current	1 A	D-C Grid Current 1.k amperes
Driving Power, approx	2 W	Driving Power, approx. 2 kilowatts
Power Output, approx	104 W	Power Output, approx. 104 kilowatts
D-C Plate Voltage, Note [1]	7 V	D-C Plate Voltage, Note 7 17,500 volts
D-C Plate Voltage, Note [2]	17500 V	D-C Plate Voltage, Note 7 17,500 volts
D=C Grid Voltage	-3000 V	D=C Grid Voltage -3,000 volts
D-C Plate Current	15 A	D-C Plate Current 15 aumperes
Plate Input	175	Plate Input 175 kilowatts
Plate Dissipation	70 W	Plate Dissipation 70 kilowatts
Note	5	Note 5: At crest of audio-frequency cycle with modulation
Note [1]	7	Note 7: The tube may be operated up to 19,000 d-c plate
Note [2]	19000	Note 7: The tube may be operated up to 19,000 d-c plate
D-C Plate Voltage	14500 V	D-C Plate Voltage 14,500 volts
D~C Grid Voltage	2250 V	D~C Grid Voltage 2,250 volts
Peak R-F Grid Voltage	3200 V	Peak R-F Grid Voltage 3,200 volts
D~-C Plate Current	8.25 A	D~-C Plate Current 8.25 amperes

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D-C Grid Current, approx	1.5 A	D-C Grid Current, approx. 1.5 amperes
Driving Power, approx	5 W	Driving Power, approx. 5.0 kilowatts
Power Output, approx	95 W	Power Output, approx. 95 kilowatts
Frequency [1]	22	Frequency 22 30 40 megacycles
Frequency [2]	30	Frequency 22 30 40 megacycles
Frequency [3]	40	Frequency 22 30 40 megacycles
Plate Voltage & Plate Input [1]	100 V	Plate Voltage & Plate Input 100 80 50 per cent
Plate Voltage & Plate Input [2]	80 V	Plate Voltage & Plate Input 100 80 50 per cent
Plate Voltage & Plate Input [3]	50 V	Plate Voltage & Plate Input 100 80 50 per cent
Published value [1]	408 W	408 F-6803 POWER TRIODE
Published value [2]	6803 W	408 F-6803 POWER TRIODE


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1962 ITT Industrial and Transmitting Tubes

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1962 ITT INDUSTRIAL AND TRANSMITTING TUBES

Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
GridPlateCapacitance	37 pF	—
GridFilamentCapacitance	75 pF	—
PlateFilamentCapacitance	2 pF	—
FilamentStartingCurrent	600 A	—
FilamentHeatingTime	15 s	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MaximumRFDCGridVoltage	-3000 V	ClassC
MaximumRFDCPlateCurrent	15 A	ClassC
MaximumRFDCGridCurrent	1.5 A	ClassC
MaximumRFPlateInput	175 kW	ClassC
MaximumSignalPlateInput	150 kW	ClassB