



ELECTRONIC TUBE REFERENCE

F5668

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Heavy-wall water-cooled power triode designed specifically for industrial RF heating. Approximately 20 kW plate dissipation, high amplification factor, and 14 kV capability provide high-power oscillator service for industrial generators.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	22 V / 60 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	50
MAXIMUM PLATE VOLTAGE	14000 V
MAXIMUM PLATE DISSIPATION	20000 W
MAXIMUM CATHODE CURRENT	9.4 A
<i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i>	

Three-electrode power tube designed specifically for radio-frequency heating service, with a heavy-wall water-cooled anode.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

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

1962 ITT

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value	20 W	20 Kilowatts Plate Dissipation
p Filament Voltage	22 V	p Filament Voltage 22 Volis
p Filament Current	60 A	p Filament Current 60 Amperes
p Filament Starting Current	120 mA	p Filament Starting Current 120 Amps. max.
p Filament Cold Resistance	31	p Filament Cold Resistance .031 Ohms
p Peak Cathode Current	9.4 A	p Peak Cathode Current 9.4 Amperes
Grid-Plate	30	Grid-Plate 30 puf
Grid-Filament	20	Grid-Filament 20 ppf
Plate-Filament	1.5	Plate-Filament 1.5 upf
Minimum Water Flow on Anode	3	Minimum Water Flow on Anode 3 GPM
Temperature	70	Temperature 70° C
Maximum Glass Temperature	160	Maximum Glass Temperature 160° C
T F [1]	5	T F 5 668 Frequency 5 125 20 Megacycles
T F [2]	668	T F 5 668 Frequency 5 125 20 Megacycles
T F [3]	5	T F 5 668 Frequency 5 125 20 Megacycles
T F [4]	125	T F 5 668 Frequency 5 125 20 Megacycles
T F [5]	20	T F 5 668 Frequency 5 125 20 Megacycles
Published value	20 V	20 Kilowatts Plate Dissipation Rated Plate Voltage
OSCILLATOR—CLASS C TELEGRAPHY Voltage [1]	-300 V	OSCILLATOR—CLASS C TELEGRAPHY Voltage —300 —400 500 Volts
OSCILLATOR—CLASS C TELEGRAPHY Voltage [2]	-400 V	OSCILLATOR—CLASS C TELEGRAPHY Voltage —300 —400 500 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
OSCILLATOR—CLASS C TELEGRAPHY Voltage [3]	500 V	OSCILLATOR—CLASS C TELEGRAPHY Voltage —300 —400 500 Volts
Maxi Rati Absolute Val Voltage [1]	1000 V	Maxi Rati Absolute Val Voltage 1,000 1,200 1,400 Yolts
Maxi Rati Absolute Val Voltage [2]	1200 V	Maxi Rati Absolute Val Voltage 1,000 1,200 1,400 Yolts
Maxi Rati Absolute Val Voltage [3]	1400 V	Maxi Rati Absolute Val Voltage 1,000 1,200 1,400 Yolts
aximum Ralings, Absolule Values DC Plate Current [1]	1.6 A	aximum Ralings, Absolule Values DC Plate Current 1.6 1.8 2.0 Amperes
aximum Ralings, Absolule Values DC Plate Current [2]	1.8 A	aximum Ralings, Absolule Values DC Plate Current 1.6 1.8 2.0 Amperes
aximum Ralings, Absolule Values DC Plate Current [3]	2 A	aximum Ralings, Absolule Values DC Plate Current 1.6 1.8 2.0 Amperes
DC Plate Voltage	14000 V	DC Plate Voltage 14,000 Volts DC Grid Current
DC Grid Voltage [1]	-3000 V	DC Grid Voltage —3,000 Vols approximate 0.21 0.22 0.23 Amperes
DC Grid Voltage [2]	0.21 V	DC Grid Voltage —3,000 Vols approximate 0.21 0.22 0.23 Amperes
DC Grid Voltage [3]	0.22 V	DC Grid Voltage —3,000 Vols approximate 0.21 0.22 0.23 Amperes
DC Grid Voltage [4]	0.23 V	DC Grid Voltage —3,000 Vols approximate 0.21 0.22 0.23 Amperes
DC Plate Current	2 A	DC Plate Current 2.0 Amperes Driving Power,
DC Grid Current [1]	0.4 mA	DC Grid Current 0.4 Amperes approximate 200 250 300 Watts
DC Grid Current [2]	200 mA	DC Grid Current 0.4 Amperes approximate 200 250 300 Watts
DC Grid Current [3]	250 mA	DC Grid Current 0.4 Amperes approximate 200 250 300 Watts
DC Grid Current [4]	300 mA	DC Grid Current 0.4 Amperes approximate 200 250 300 Watts
Plate Input	28 W	Plate Input 28 Kilowatts Power Output,
Plate Dissipation [1]	20 W	Plate Dissipation 20 Kilowatts approximate 8.7 12.8 17.5 Kilowatts
Plate Dissipation [2]	8.7 W	Plate Dissipation 20 Kilowatts approximate 8.7 12.8 17.5 Kilowatts
Plate Dissipation [3]	12.8 W	Plate Dissipation 20 Kilowatts approximate 8.7 12.8 17.5 Kilowatts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation [4]	17.5 W	Plate Dissipation 20 Kilowatts approximate 8.7 12.8 17.5 Kilowatts
DC Plate Voltage [1]	8000 V	DC Plate Voltage 8,000 10,000 12,000 Volts conditions.
DC Plate Voltage [2]	10000 V	DC Plate Voltage 8,000 10,000 12,000 Volts conditions.
DC Plate Voltage [3]	12000 V	DC Plate Voltage 8,000 10,000 12,000 Volts conditions.
power tubes, Federal's experi- Type F_	5668 W	power tubes, Federal's experi- Type F_5668
T LT PLATE CHARACTERISTICS [1]	13	T LT PLATE CHARACTERISTICS 13 2487
T LT PLATE CHARACTERISTICS [2]	2487	T LT PLATE CHARACTERISTICS 13 2487
A POWER TRIODE =	22 W	A POWER TRIODE =22 -
PLATE KILOVOLTS	2	PLATE KILOVOLTS 2 " e
Published value	20 W	20 Kilowatts Plate Dissipation most exacting users.



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

SOURCE PDF

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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum full-rating frequency	5 MHz	—
Cooling method	water	—