



ELECTRONIC TUBE REFERENCE

F5919

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

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Forced-air-cooled high-power transmitting triode for RF amplification, oscillation, and Class B modulation. Approximately 35 kW plate dissipation and 17.5 kV capability provide major fixed-station transmitter power without water cooling.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	11 V / 285 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
AMPLIFICATION FACTOR	37
MAXIMUM PLATE VOLTAGE	17500 V
MAXIMUM PLATE DISSIPATION	35000 W
MAXIMUM CATHODE CURRENT	100 A
Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.	

Three-electrode high-power tube for RF amplifier, oscillator and Class B modulator service with forced-air cooling.

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	35 W	35 Kilowatts Plate Dissipation
dissipating	35	dissipating 35 kilowatts. The cathode is a thoriated
tungsten filament. Maximum ratings apply up to	22	tungsten filament. Maximum ratings apply up to 22
p Filament Voltage	11 V	p Filament Voltage 11 Volts
p Filament Current	285 A	p Filament Current 285 Amperes
p Filament Starting Current	1000 mA	p Filament Starting Current 1,000 Amperes max.
p Filament Cold Resistance	5	p Filament Cold Resistance .005 Ohms
p Peak Cathode Current	100 A	p Peak Cathode Current 100 Amperes
Grid-Plate	345	Grid-Plate 345 puf
Grid-Filament	75	Grid-Filament 75 puf
Plate-Filament	2.6	Plate-Filament 2.6 puf
Temperature	45	Temperature 45° C
Maximum Glass Temperature	165	Maximum Glass Temperature 165° C
FEDERAL POWER TRIODE The F	5919 W	FEDERAL POWER TRIODE The F-5919 enables single-ended
Published value	35 W	35 Kilowatts Plate Dissipation output.
AND MODULATOR—CLASS B DC Plate Voltage [1]	10000 V	AND MODULATOR—CLASS B DC Plate Voltage 10,000 11,000 Volts
AND MODULATOR—CLASS B DC Plate Voltage [2]	11000 V	AND MODULATOR—CLASS B DC Plate Voltage 10,000 11,000 Volts
\ DC Grid Voltage [1]	-750 V	. \ DC Grid Voltage —750 —900 Volts
\ DC Grid Voltage [2]	-900 V	. \ DC Grid Voltage —750 —900 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Ratings, Absolute Values Peak R-F Grid Voltage [1]	1360 V	Maximum Ratings, Absolute Values Peak R-F Grid Voltage 1,360 1,500 Volts
Maximum Ratings, Absolute Values Peak R-F Grid Voltage [2]	1500 V	Maximum Ratings, Absolute Values Peak R-F Grid Voltage 1,360 1,500 Volts
DC Plate Voltage [1]	17500 V	DC Plate Voltage 17,500 Volts DC Plate Current 6.6 5.7 Amperes
DC Plate Voltage [2]	6.6 V	DC Plate Voltage 17,500 Volts DC Plate Current 6.6 5.7 Amperes
DC Plate Voltage [3]	5.7 V	DC Plate Voltage 17,500 Volts DC Plate Current 6.6 5.7 Amperes
Maximum Signal DC Plate Current{ [1]	14 mA	Maximum Signal DC Plate Current{ 14 Amperes DC Grid Current 0.9 0.9 Ampere
Maximum Signal DC Plate Current{ [2]	0.9 mA	Maximum Signal DC Plate Current{ 14 Amperes DC Grid Current 0.9 0.9 Ampere
Maximum Signal DC Plate Current{ [3]	0.9 mA	Maximum Signal DC Plate Current{ 14 Amperes DC Grid Current 0.9 0.9 Ampere
Maximum Signal Plate Inputt [1]	175 W	Maximum Signal Plate Inputt 175 Kilowatts Driving Power, approx. .2 1.3 Kilowatts
Maximum Signal Plate Inputt [2]	2 W	Maximum Signal Plate Inputt 175 Kilowatts Driving Power, approx. .2 1.3 Kilowatts
Maximum Signal Plate Inputt [3]	1.3 W	Maximum Signal Plate Inputt 175 Kilowatts Driving Power, approx. .2 1.3 Kilowatts
Plate Dissipationt [1]	35 W	Plate Dissipationt 35 Kilowatts Power Output, approx. 50 50 Kilowatts
Plate Dissipationt [2]	50 W	Plate Dissipationt 35 Kilowatts Power Output, approx. 50 50 Kilowatts
Plate Dissipationt [3]	50 W	Plate Dissipationt 35 Kilowatts Power Output, approx. 50 50 Kilowatts
DC Grid Voltage	-220 V	DC Grid Voltage —220 Volts
Peak A-F Grid-to-Grid Voltage	820 V	Peak A-F Grid-to-Grid Voltage 820 Volts (Key-down conditions per tube without amplitude modulation)¥
Zero Signal DC Plate Current	600 mA	Zero Signal DC Plate Current 0.6 Ampere M . .
Maximum Signal DC Plate Current	5.8 mA	Maximum Signal DC Plate Current 5.8 Amperes aximum Ratings solute Yalues
Effective Load Resistance, Plate DC Plate Voltage	17500 V	Effective Load Resistance, Plate DC Plate Voltage 17,500 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
to Plate [1]	3600	to Plate 3,600 Ohms DC Grid Voltage —3,000 Volts
to Plate [2]	-3000	to Plate 3,600 Ohms DC Grid Voltage —3,000 Volts
Max. Sig. Driving Power, approx [1]	820 mA	Max. Sig. Driving Power, approx. 820 Wats DC Plate Current 14 Amperes
Max. Sig. Driving Power, approx [2]	14 mA	Max. Sig. Driving Power, approx. 820 Wats DC Plate Current 14 Amperes
Max. Sig. Power Output, approx [1]	37 mA	Max. Sig. Power Output, approx. 37 Kilowatts DC Grid Current 2 Amperes
Max. Sig. Power Output, approx [2]	2 mA	Max. Sig. Power Output, approx. 37 Kilowatts DC Grid Current 2 Amperes
tAveraged over any audio frequency cycle of sine-wave form. Plate Input	175	tAveraged over any audio frequency cycle of sine-wave form. Plate Input 175 Kilowatts
Plate Dissipation	35 W	Plate Dissipation 35 Kilowatts
Can be held . DC Plate Voltage	10000 V	Can be held . DC Plate Voltage 10,000 Volts
(Carrier conditions per tube for use with a maximum DC Grid Voltage	-1000	(Carrier conditions per tube for use with a maximum DC Grid Voltage —1,000 Volts
Peak R-F Grid Voltage	1675	Peak R-F Grid Voltage 1,675 Volts
Maximum Ratings, Absolute Values DC Plate Current	6.4 mA	Maximum Ratings, Absolute Values DC Plate Current 6.4 Amperes
DC Plate Voltage [1]	14000 V	DC Plate Voltage 14,000 Volts DC.Z .Grid Current, approx 1.1 Amperes
DC Plate Voltage [2]	1.1 V	DC Plate Voltage 14,000 Volts DC.Z .Grid Current, approx 1.1 Amperes
Driving Power, approximate	1.7 W	. Driving Power, approximate 1.7 Kilowatts
DC Grid Voltage [1]	-3 V	DC Grid Voltage —3.000 Volts Power Output approx 50 Kilowatts
DC Grid Voltage [2]	50 V	DC Grid Voltage —3.000 Volts Power Output approx 50 Kilowatts
DC Plate Current	12 A	DC Plate Current 12 Amperes , put, approx
DC Grid Current	2 A	DC Grid Current 2 Amperes
Plate Input	100	Plate Input 100 Kilowatts fModulation essentially negative may be used if the positive
Plate Dissipation	24 W	Plate Dissipation 24 Kilowatts conditions.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The F	5919 W	The F-5919 grid is especially FEDERAL POWER TRIODE
Published value	35 W	35 Kilowatts Plate Dissipation greater value for your tube doliar.
and heavy wall anode contribute Type F [1]	59	and heavy wall anode contribute Type F.59 9
and heavy wall anode contribute Type F [2]	9	and heavy wall anode contribute Type F.59 9
to the electrical and mechanically	35 W	to the electrical and mechanically 35 Kilowatts Plate Dissipation



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	22 MHz	—
Cooling method	forced air	—