



ELECTRONIC TUBE REFERENCE

6949

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

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
TRIODE

Extremely high-power transmitting triode for continuous-wave RF service. Published operation reaches approximately 500 kW CW output, with about 20 kV plate operation and extraordinary hundreds-of-kilowatts dissipation capability for the largest fixed transmitters.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	7.9 V / 1100 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Triode	
MAXIMUM PLATE VOLTAGE	20000 V
MAXIMUM PLATE DISSIPATION	400000 W
MAXIMUM CATHODE CURRENT	57 A
Published maximum ratings and characteristics promoted directly from the supplied datasheet; additional operating data retained in parameters.	

High-frequency or high-power triode for oscillator, RF, or transmitting service. The supplied datasheet was reviewed for heater/filament data, maximum ratings, operating conditions, capacitances, pulse/RF data, and thermal limits.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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

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Section 1 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
500-KW CW POWER OUTPUT	500	CW
Current at 7.3 volts – published value 1	7.3 A	Published datasheet value
Current at 7.3 volts – published value 2	1040 A	Published datasheet value
Current at 7.8 volts – published value 1	7.8 A	Published datasheet value
Current at 7.8 volts – published value 2	1130 A	Published datasheet value
Starting current	1700 A	Published datasheet value
Cold resistance – published value 1	0 ohm	Published datasheet value
Cold resistance – published value 2	13 ohm	Published datasheet value
volts . = -50 and do plate voltage	-50	Published datasheet value
Grid to plate	12	Published datasheet value
Grid to filament	1300	Published datasheet value
Plate to filament	160	Published datasheet value
temperature to 150° C. Forced-air cool ing of the output	150	Published datasheet value
Minimum Plate-Water~olumn Resistance – published value 1	1000 V	Published datasheet value
Minimum Plate-Water~olumn Resistance – published value 2	2000 V	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Voltage	18000	Published datasheet value
DC Grid Voltage (Approx.)'	-300	Published datasheet value
Zero-Signal DC Plate Current	5 A	Published datasheet value
Effective RF Load Resistance	170 ohm	Published datasheet value
Average do plate current	37 A	Published datasheet value
Average do grid current	220 mA	Published datasheet value
Peak envelope rf grid voltage	1900	Published datasheet value
Average power output (Approx)	300000 W	Published datasheet value
Peak envelope power output (Approx.)	600000 W	Published datasheet value
DC Plate Voltage	17500	Published datasheet value
Peak RF Grid Voltage	2000	Published datasheet value
DC Plate Current	40 A	Published datasheet value
DC Grid Current	1 A	Published datasheet value
Useful Power Output (Approx.)	500000 W	Published datasheet value
Filament Current – published value 1	1 A	Published datasheet value
Filament Current – published value 2	870 A	Published datasheet value
Filament Current – published value 3	1100 A	Published datasheet value
Amplification Factor – published value 1	12 A	Published datasheet value
Amplification Factor – published value 2	48 A	Published datasheet value
Amplification Factor – published value 3	74 A	Published datasheet value
Grid to plate	20	Published datasheet value
Grid to filament – published value 1	1150	Published datasheet value
Grid to filament – published value 2	1550	Published datasheet value
Plate to filament – published value 1	140	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate to filament – published value 2	170	Published datasheet value
x ote 1 – published value 1	1	Published datasheet value
x ote 1 – published value 2	7.9	Published datasheet value
Note 2 – published value 1	2	Published datasheet value
Note 2 – published value 2	-50	Published datasheet value
frequency envelope does not exceed 1155 of the carrier conditions	1155	Published datasheet value
of 0.1 second al l grid power in the event of excessive grid	0.1 s	Published datasheet value
protective device for removal of plate voltage from the 6949	6949	Published datasheet value
RETURN TERMINAL	6.3	Published datasheet value
FILAMENT FLANGE	1	Published datasheet value
NOTE 4	4	Published datasheet value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
the maximum temperature rating of 150° C, particularly	150 mA	Published datasheet value
Outlet Water Temperature (Anyoutlet)	70 mA	Published datasheet value
Ceramic-Bushing Temperature	150 mA	Published datasheet value
Metal-Surface Temperature	150 mA	Published datasheet value
MAX.-SIGNAL DC PLATE CURRENT	60 mA	Published datasheet value
MAX.-SIGNAL PLATE INPUT	1100 A	Published datasheet value
MAX.-SIGNAL DC GRID CURRENT	1.5 mA	Published datasheet value
PLATE DISSIPATION (Average)	400 A	Published datasheet value
Max.-signal do plate current	57 A	Published datasheet value
Max.-signal do grid current	350 mA	Published datasheet value
Max.-signal peak rf grid voltage	1900	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max.-signal power output (Approx.)	600000 W	Published datasheet value
DC PLATE VOLTAGE	20 A	Published datasheet value
DC GRID VOLTAGE	-1 A	Published datasheet value
DC PLATE CURRENT	50 mA	Published datasheet value
PLATE INPUT	1000 A	Published datasheet value
PLATE DISSIPATION	400 A	Published datasheet value