



ELECTRONIC TUBE REFERENCE

F7339

Specialized - Traveling Wave electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRAVELINGWAVE

Specialized ITT traveling-wave microwave amplifier intended for broadband RF amplification; surviving extracted documentation provides limited operating detail.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	— / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 TravelingWave

No fixed ratings recorded.

Published maximum ratings and characteristics audited; remaining values retained densely in parameter table.

The F7339 is a one-kilowatt pulsed traveling-wave amplifier covering approximately 8.5 to 9.6 GHz, with a rugged metal envelope, helix slow-wave structure, and 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 · TravelingWave

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The F [1]	7339	The F-7339 is a 1 kilowatt pulse traveling wave amplifier tube having 27 db
The F [2]	1	The F-7339 is a 1 kilowatt pulse traveling wave amplifier tube having 27 db
The F [3]	27	The F-7339 is a 1 kilowatt pulse traveling wave amplifier tube having 27 db
gain and [1]	8500	gain and 8500 to 9600 mc frequency range. It is constructed in a rugged metal
gain and [2]	9600	gain and 8500 to 9600 mc frequency range. It is constructed in a rugged metal
used. Duty cycles up to [1]	5	used. Duty cycles up to .005 and pulse widths up to 10 microseconds can be used.
used. Duty cycles up to [2]	10	used. Duty cycles up to .005 and pulse widths up to 10 microseconds can be used.
Heater Voltage [1]	6.3 V	Heater Voltage 6.3 (±10%) wvolts
Heater Voltage [2]	10 V	Heater Voltage 6.3 (±10%) wvolts
Heater Current	2.5 A	Heater Current 2.5 amperes
Maximum Anode Voltage (Note [1])	1 V	Maximum Anode Voltage (Note 1) 12 kilovolts peak
Maximum Anode Voltage (Note [2])	12 V	Maximum Anode Voltage (Note 1) 12 kilovolts peak
Maximum Shell Current (Note [1])	2 A	Maximum Shell Current (Note 2) 0.5 ampere peak
Maximum Shell Current (Note [2])	500 mA	Maximum Shell Current (Note 2) 0.5 ampere peak
Maximum Collector Voltage (Note [1])	3 V	Maximum Collector Voltage (Note 3) 12.5 kilovolts peak

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Collector Voltage (Note [2])	12.5 V	Maximum Collector Voltage (Note 3) 12.5 kilovolts peak
Maximum Collector Dissipation (Note [1])	4 W	Maximum Collector Dissipation (Note 4) 150 watts average
Maximum Collector Dissipation (Note [2])	150 W	Maximum Collector Dissipation (Note 4) 150 watts average
Maximum R-F Input Power	5 W	Maximum R-F Input Power 5 watts average
Maximum R-F Output Power	10 W	Maximum R-F Output Power 10 watts average
Maximum Pulse Width (Beam)	10	Maximum Pulse Width (Beam) 10 microseconds
Maximum Cathode Current	2.5 A	Maximum Cathode Current 2.5 amperes peak
Maximum Frequency (Note [1])	5	Maximum Frequency (Note 5) 9600 mc
Maximum Frequency (Note [2])	9600	Maximum Frequency (Note 5) 9600 mc
Minimum Frequency (Note [1])	5	Minimum Frequency (Note 5) 8500 mc
Minimum Frequency (Note [2])	8500	Minimum Frequency (Note 5) 8500 mc
Air Flow on Collector Radiator (Note [1])	4	Air Flow on Collector Radiator (Note 4) 30 cfm
Air Flow on Collector Radiator (Note [2])	30	Air Flow on Collector Radiator (Note 4) 30 cfm
Glass Temperature	160	Glass Temperature 160°C max.
Center Frequency	9000	Center Frequency 9000 mc
Anode Voltage (Note [1])	1 V	Anode Voltage (Note 1) 11 kilovolts peak
Anode Voltage (Note [2])	11 V	Anode Voltage (Note 1) 11 kilovolts peak
Cathode Current	1.8 A	Cathode Current 1.8 amperes peak
Collector Voltage (tied to Shell)	11 V	Collector Voltage (tied to Shell) 11 kilovolts peak
Collector Current	1.5 A	Collector Current 1.5 amperes peak
Power Output (at center frequency)	1.5 W	Power Output (at center frequency) 1.5 kilowatts peak
Bandwidth for Po = [1]	1	Bandwidth for Po = 1 kilowatt 8.5to0 9.6 kmc
Bandwidth for Po = [2]	8.5	Bandwidth for Po = 1 kilowatt 8.5to0 9.6 kmc
Bandwidth for Po = [3]	9.6	Bandwidth for Po = 1 kilowatt 8.5to0 9.6 kmc
Gain (Note [1])	6	Gain (Note 6) 27 db
Gain (Note [2])	27	Gain (Note 6) 27 db
Pulse Width	2	Pulse Width 2 microseconds

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Note	1 V	Note 1: All voltages shown are with respect to cathode. Anode and helix are
Note	2 A	Note 2: The shell current is the difference between cathode current and collect-
Note	3	Note 3: The tube may be operated with the collector tied to the shell (anode and
Note	4 W	Note 4: Forced air cooling is required for average collector power in excess
of	10 W	of 10 watts. As the collector power is increased, the air flow re-
quired increases. At the maximum collector power of	150 W	quired increases. At the maximum collector power of 150 watts, a
Note [1]	5 W	Note 5: Useful gain and power output exists below 8500 mc and above 9600 mc
Note [2]	8500 W	Note 5: Useful gain and power output exists below 8500 mc and above 9600 mc
Note [3]	9600 W	Note 5: Useful gain and power output exists below 8500 mc and above 9600 mc
Note [1]	6 W	Note 6: This gain is obtained over the 8.5 to 9. 6 kmc bandwidth at the power
Note [2]	8.5 W	Note 6: This gain is obtained over the 8.5 to 9. 6 kmc bandwidth at the power
Note [3]	9 W	Note 6: This gain is obtained over the 8.5 to 9. 6 kmc bandwidth at the power
Note [4]	6 W	Note 6: This gain is obtained over the 8.5 to 9. 6 kmc bandwidth at the power
signal gain will be approximately	10	signal gain will be approximately 10 db higher.
([1]	1 V	(1) Heater warm up of 2 minutes before applying high voltage is recommended.
([2]	2 V	(1) Heater warm up of 2 minutes before applying high voltage is recommended.
Published value	2	2 Heater -Cathode
Published value	10	10 Heater