



ELECTRON TUBE DIVISION

CLIFTON, NEW JERSEY

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

**F-2058
TRAVELING
WAVE TUBE**

TENTATIVE

GENERAL DESCRIPTION

The F-2058 is a 1000 watt pulse traveling wave amplifier tube having 30 db gain and designed primarily for use in the 2900 to 3100 mc frequency range. It is constructed in a rugged metal envelope with a helix type slow wave structure. The integral matching circuit is in 50 ohm coaxial line and is provided with type "TNC" connectors. The tube is focused by a periodic permanent magnet which is integral with the tube. A convergent beam gun and oxide impregnated cathode are used. Duty cycles up to .01 and pulse widths up to 100 microseconds can be used.

ELECTRICAL RATINGS, ABSOLUTE VALUES

Heater Voltage	6.3 ($\pm 10\%$)	volts	Maximum R-F Input Power	2	watts average
Heater Current	3.0	amperes	Maximum R-F Output Power	30	watts average
Maximum Anode Voltage (Note 1)	8000	volts	Maximum Duty Cycle	.01	
Maximum Shell Current	0.8	ampere peak	Maximum Pulse Width (beam)	100	microseconds
Maximum Collector Voltage	8000	volts	Maximum Cathode Current	2.0	ampere peak
Maximum Collector Dissipation	160	watts average			

ELECTRICAL INFORMATION

Maximum Frequency (Note 2)	3100	mc	Minimum Cold Transmission Loss	50	db
Minimum Frequency (Note 2)	2900	mc			

MECHANICAL INFORMATION

Type of Cathode	Oxide Impregnated Unipotential	Weight	10 Pounds	Maximum
Base	(See Outline)	R-F Connections	Type "TNC"	
Type of Envelope	Metal	Cooling Data	25 cfm of air	
Mounting Position	Any			

TYPICAL OPERATION AS POWER AMPLIFIER

Frequency	2900 to 3100	mc	Power Output (minimum)	1000	watts peak
Anode Voltage (Note 1)	7300	volts	Gain	30	db
Cathode Current	1.4	amperes peak	Duty	.01	
Collector Voltage (tied to shell)	7300	volts	Pulse Width	5	microseconds
Collector Current	0.9	amperes peak			

NOTE 1: All voltages shown are with respect to cathode. The shell is normally operated at ground potential and the anode connection is made to the shell of the package.

NOTE 2: Useful gain and power output exists below 2900 mc and above 3100 mc and can be utilized by adjusting anode voltage to optimize the frequency range desired. However, bandwidth cannot be extended both upward and downward simultaneously and maximum gain and power output outside the normal bandwidth will be lower than rated.

NOTE 3: Heater warm up of two minutes before applying high voltage is recommended.

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