



ELECTRON TUBE DIVISION

CLIFTON, NEW JERSEY

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

F-2517 BACKWARD WAVE OSCILLATOR

TENTATIVE

GENERAL

The F-2517 is a voltage-tunable, wide-band oscillator with a minimum output power of 50 milliwatts over its rated operating frequency range. This permanent magnet focused, highly stable device finds applications as a swept signal source in signal generators; master oscillator for frequency diversity transmitters; or typically as a local oscillator in radar or ECM receivers. The tube features a bifilar helix contained in a rugged envelope of simple mechanical design thus providing a highly reliable, compact unit. No cooling is required when the environment is below +60°C ambient temperature.

ELECTRICAL

	TYPICAL ABSOLUTE UNITS				TYPICAL ABSOLUTE UNITS		
Frequency	3.7 - 5.5	Note 1	Gcs	Grid Voltage for no Oscillation (RF Cutoff) (with respect to Cathode)	-11	-30 max.	Volts
Power Output	50 - 250	50 min.	mw	Collector Voltage (with respect to Helix)	+100	+150 max.	Volts
Power Output Variation	7	8 max.	db	Capacitance, Cathode to all Electrodes	42	50 max.	μμfd.
Fine Grain Variation, Note 2	+1.5	+2 max.	db 180 mc	Capacitance, Grid to all Electrodes	30	45 max.	μμfd.
VSWR	2.5:1	3:1 max.	-	Capacitance, Helix to all other Electrodes and Capsule	210	300 max.	μμfd.
Output Impedance	50	50	Ohms	Spurious Output below Signal	30	40 min.	db
Heater Voltage	6.3	6.0 min./6.6 max.	Volts				
Heater Current	.98	1.20 max.	Amps				
Anode Voltage	130	250 max.	Volts				
Anode Current (with respect to Cathode)	.25	1.0 max.	Ma				
Cathode Current	15.0	20 max.	Ma				
Helix Voltage (with respect to Cathode)	300 to 960	200 to 1100	Volts				
Helix Current	1.5	3.0 max.	Ma				
Cathode Voltage	Zero (ground)	Zero (ground)	Volts				

NOTE 1 The F-2517 will operate over the frequency range of 3.663 to 5.555 Gcs. with a 3 db reduction in the rated minimum output power.

NOTE 2 This value is determined by selecting the 180 mc region of the frequency range which has the greatest differences in power output. The difference between these power levels is divided by two and the plus or minus sign is affixed to denote the difference from an average power level.

MECHANICAL

Package Length	9.90	9.95 max.	Inches	Output Cable Length			
Package Diameter	3.00	3.02 max.	Inches	(to end of Type "N" Connector)	15	14 min./16 max.	Inches
Package Weight	9 lbs. -14 oz.	10 max.	Pounds				
Power Cable Length (to end of MS3106B18-IP Plug)	12	11 min./13 max.	Inches				

Additional information for specific applications can be obtained from the

Electron Tube Applications Section
ITT Electron Tube Division
Post Office Box 104
Clifton, New Jersey

