



# ELECTRON TUBE DIVISION

CLIFTON, NEW JERSEY

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

## F-2519 BACKWARD WAVE OSCILLATOR

### TENTATIVE

#### GENERAL

The F-2519 is a voltage-tunable, wide-band oscillator with a minimum output power of 75 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	2.4 -5.3	Note 1	Gcs	*Grid Voltage for no			
Power Output	75 - 300	75 min.	mW	Oscillation (RF Cutoff)			
Power Output Variation	6	8 max.	db	(with respect to Cathode)	-11	-30 max.	Volts
Fine Grain Variation, Note 2	+1.0	+1.5 max.	db 290 mc	*Collector Voltage (with			
VSWR	2.5:1	3:1 max.	-	respect to Helix)	+100	+150 max.	Volts
Output Impedance	50	50	Ohms	Capacitance, Cathode to			
Heater Voltage	6.3	6.0 min.	Volts	all Electrodes	42	50 max.	μμfd.
		6.6 max.		Capacitance, Grid to all			
Heater Current	.98	1.2 max.	Amps	Electrodes	30	45 max.	μμfd.
Anode Voltage (with				Capacitance, Helix to all			
respect to Cathode)	120	250 max.	Volts	other Electrodes and			
Anode Current	0.15	1.0 max.	Ma	Capsule	220	300 max.	μμfd.
Cathode Current	14.0	20 max.	Ma	Spurious Output below			
*Helix Voltage	Zero	Zero	Volts	Signal	50	40 min.	db.
Helix Current	3.0	5.0 max.	Ma				
*Cathode Voltage (with	-220 to	-150 to	Volts				
respect to Helix)	-1850	-2100					

\*The above data shows tube operation with helix at ground potential (Zero Volts). If desired as an alternate, any one of the asterisked elements may be operated at ground potential, provided the other electrode potentials are set at the appropriate relative levels.

NOTE 1 The F-2519 will operate over the frequency range of 2.375 to 5.353 Gcs. with a 3 db reduction in the rated minimum output power.

NOTE 2 This value is determined by selecting the 290 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			
Package Weight	9 lbs. 14 oz.	10 max.	Pounds	**N** Connector)	15	14 min./16 max.	Inches
Power Cable Length							
(to end of Win-							
chester PM6P							
Connector)	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

