



ELECTRON TUBE DIVISION

CLIFTON, NEW JERSEY

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

**F-2516
BACKWARD WAVE
OSCILLATOR**

TENTATIVE

GENERAL

The F-2516 is a voltage-tunable, wide-band oscillator with a minimum output power of 20 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 oscillators 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	5.3 - 10.3	Note 1	Gcs	*Grid Voltage for no			
Power Output	25 - 200	20 min.	mw	Oscillation (RF Cutoff)			
Power Output Variation	9	10 max.	db	(with respect to cathode)	-20	-30 max.	Volts
Fine Grain Variation, Note 2	±2	±2.5	db/500 mc	*Collector Voltage (with			
VSWR	2.5:1	3.5:1	—	respect to Helix)	+100	+150 max.	Vdc
Output Impedance	50	50	Ohms	Capacitance, Cathode to			
Heater Voltage	6.3	6.0 min./ 6.6 max.	Volts	all Electrodes	40	50 max.	μμfd.
Heater Current	0.96	1.2 max.	Amps	Capacitance, Grid to			
Anode Voltage (with respect to Cathode)	200	250 max.	Volts	all Electrodes	30	45 max.	μμfd.
Anode Current	.25	1.0 max.	Ma	Capacitance, Helix to all			
Cathode Current	10	15 max.	Ma	other Electrodes and			
*Helix Voltage	Zero	Zero	Volts	Capsule	120	200 max.	μμfd.
Helix Current	4.0	6.0	Ma	Spurious Output below			
*Cathode Voltage (with respect to Helix)	-245 to -2400	-200 to -2500	Volts	Signal	50	40 min.	db.

*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-2516 will operate over the frequency range of 5.247 to 10.4 Gcs. with a 3 db reduction in rated minimum output power.

NOTE 2 This value is determined by selecting the 500 mc region of the frequency range which has the greatest difference in power output. The difference between these power levels is divided by two and the plus or minus sign 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 Con- nector)	12	11 min./13 max.	Inches				

Additional information for specific applications can be obtained from the

Electron Tube Applications Section
ITT Electron Tube Division
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