ELECTRON TUBE DIVISION
CLIFTON, NEW JERSEY
INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

F-2513 BACKWARD WAVE OSCILLATOR

TENTATIVE

GENERAL

The F-2513 is a voltage-tunable, wide-band oscillator with a minimum output power of 25 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
Frequency	1.0 - 4.0	Note 1	Gcs
Power Output	25 - 150	25 min.	mw
Power Output Variation	11	15 max.	db
Fine Grain Variation, Note 2	±3	±3 max.	db/300 mc
VSWR	2.5:1	3:1 max.	—
Output Impedance	50	50	Ohms
Heater Voltage	6.3	6.0 min./ 6.6 max.	Volts
Heater Current	.96	1.2 max.	Amps
Anode Voltage (with respect to Cathode)	95	250 max.	Volts
Anode Current	.15	1.0 max.	Ma
Cathode Current	12	20 max.	Ma
*Helix Voltage	Zero	Zero	Volts
Helix Current	5	8 max.	Ma
*Cathode Voltage (with respect to Helix)	-100 to -2400	-90 to -2500	Volts

	TYPICAL	ABSOLUTE	UNITS
*Grid Voltage for no Oscillation (RF Cutoff) (with respect to Cathode)	-11	-20 max.	Volts
*Collector Voltage (with respect to Helix)	+100	+150 max.	Volts
Capacitance, Cathode to all Electrodes	42	50 max.	$\mu\mu$fd.
Capacitance, Grid to all Electrodes	30	45 max.	$\mu\mu$fd.
Capacitance, Helix to all other Electrodes and Capsule	220	300 max.	$\mu\mu$fd.
Spurious Output below 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-2513 will operate over the frequency range of .99 to 4.04 Gcs. with a 3 db reduction in the rated minimum output power.

NOTE 2 This value is determined by selecting the 300 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.

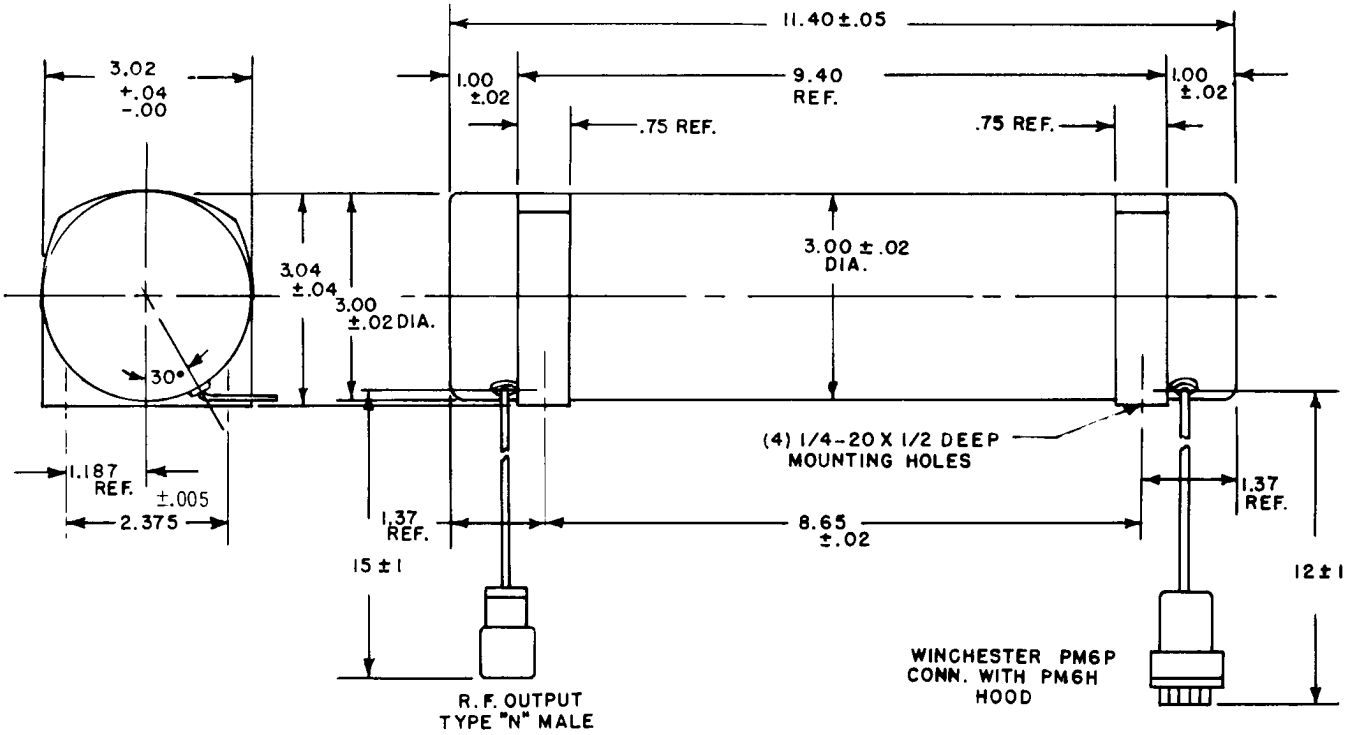
MECHANICAL

Package Length	11.40	11.45 max.	Inches
Package Diameter	3.00	3.02 max.	Inches
Package Weight	14 lbs. -4 oz.	14.5 max.	Pounds
Power Cable Length (to end of Winchester PM6P Connector)	12	11 min./13 max.	Inches
Output Cable Length (to end of Type "N" Connector)	15	14 min./16 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

F-2513



A-COLLECTOR
B-HELIX
C-HEATER
D-HEATER-CATHODE
E-ANODE
F-GRID (FOCUS)