



5 to 10 GHz VOLTAGE TUNED OSCILLATOR

VTO-7500-67M
VTO-7500-67T

Overview:

Phase Matrix's VTO-7500-67 is a low-noise fundamental voltage-controlled source and can be used as a clock for high-speed systems or as a local oscillator or transmitter oscillator for high-frequency communications and radar systems.

This low-noise source uses a high-performance, low-noise silicon bi-polar junction transistor (Si BJT) in conjunction with a hyper-abrupt varactor diode to tune over frequency range in the C and X bands. A GaAs MMIC buffer amplifier is used to provide the necessary power output and load isolation of the oscillators.

Features:

- Operating frequency 5 to 10 GHz
- Output power 10 dBm typ.
- Phase noise < -95 dBc/Hc @ 100 kHz.
- Low power consumption
- Tuning sensitivity ratio 2:1 typ.
- Tuning voltage 0 to 20 V

Applications:

- X-band, low noise source
- Instrumentation



Specifications

ABSOLUTE MAXIMUM RATINGS

PARAMETER	UNITS	RATING
Positive Supply Voltage	V	+6
Tuning Voltage	V	0 to +20
Operating Temperature	C	-10° to +85°
Storage Temperature	C	-40° to +125°

ELECTRICAL SPECIFICATIONS (measured at 0° to +70°)

PARAMETER	UNITS	MIN.	TYP.	MAX.
Center Frequency f_0	GHz	5		10
Vt @ 5 GHz	V	0		
vt @ 10 GHz	V			20
Output Power (50 ohms load)	dBm	7	10	13

ELECTRICAL SPECIFICATIONS (continued)

PARAMETER	UNITS	MIN.	TYP.	MAX.
Tuning Sensitivity	MHz/V	200		700
Tuning Sensitivity Ratio			2:1	
Modulation Bandwidth	MHz	20		
Output Return Loss	dB	10	12	
Second Harmonic (below carrier)	dBc		-20	
Third Harmonic (below carrier)	dBc		-20	
Spurious Output (below carrier)	dBc			-60
Phase Noise @ 100 kHz from f_0	dBc/Hz		-95	-90
Phase Noise @ 10 MHz from f_0	dBc/Hz			-135
Frequency Drift over Temp.	MHz			80

5 to 10 GHz VOLTAGE TUNED OSCILLATOR

Model VTO-7500-67

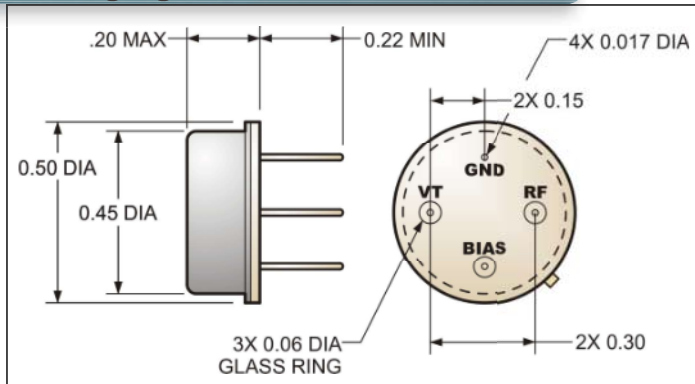
Specifications and ordering information subject to change without notice.

Specifications (continued)

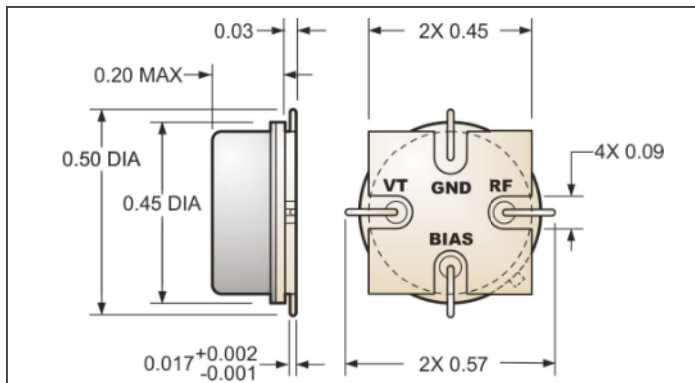
ELECTRICAL SPECIFICATIONS (continued)

PARAMETER	UNITS	MIN.	TYP.	MAX.
Pulling Figure (12 dB Return Loss)	MHz		10	
Pushing Figure (± 0.25 V)	MHz		40	
Supply Voltage	V	+4.85	+5	+5.15
Positive Supply Current	mA	65	75	

Packaging Information

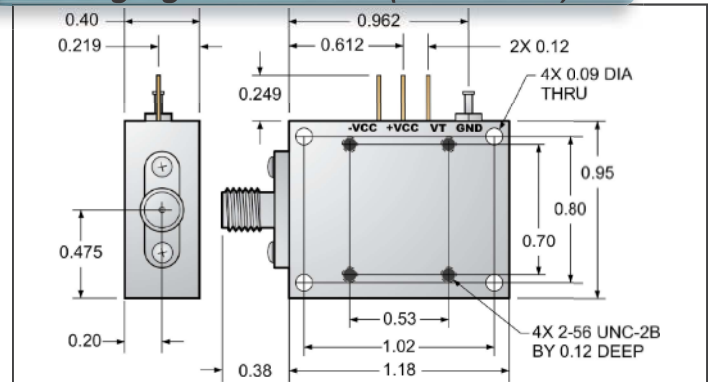


T = TO-8



S = Surface Mount TO-8

Packaging Information (continued)



M = Connectorized

Ordering Information

ORDERING INFORMATION

DESCRIPTION	SPECIFICATION
Model No.	VTO-7500-67
Packaging Options	S, T, or M

Notes:

- 1) See our [catalog](#) for information about other microwave components and sub-assemblies.

Data sheet PN: DS_VTO-7500-67 Rev. 2

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