



Features and Benefits

High frequency stability (up to $\pm 1.0\text{ppm}$ over -40°C to $+85^\circ\text{C}$)
Clipped Sine Output
SMD Miniature package

Typical Applications

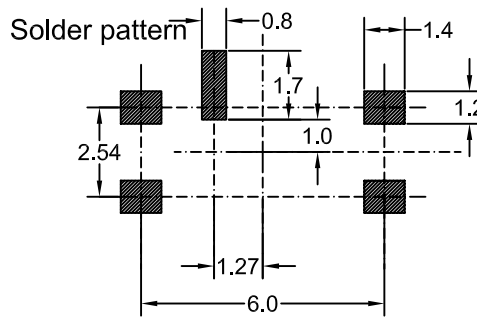
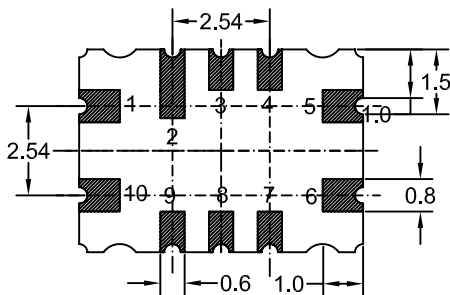
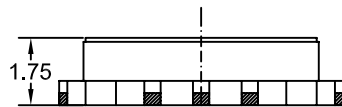
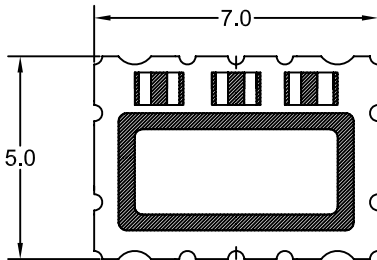
UHF Synthesizers
SATCOM System
Portable Microwave Applications

Description

TCXO7500BT-50MHz-B-V offers wide temperature operation from -40°C to $+85^\circ\text{C}$ with outstanding frequency stability and low phase noise performance.

Mechanical Drawing & Pin Connections

Drawing No: MD150075-8



Pin Function

- #1 Control Voltage
- #5 GND
- #6 Output
- #9 Tri-state or NC
- #10 Vcc

Do not connect #2, #3, #4, #7, #8

Unit in mm
1mm = 0.0394 inch



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			50		MHz	
Output			Clipped sine				
Output Level			> 0.8 Vp-p				
Output load			10 kΩ // 10 pF				
Power Supply							
Voltage	V _{cc}	±5%		3.30		V	
Current Consumption			1.5		7	mA	
Frequency Control*							
Control voltage range	V _c		0.5		2.5	V	
Tuning range			±5		±10	ppm	Tuning Slope Positive
Control voltage input impedance			100			kohm	
Tri-state function			pin9 high or open pin6 oscillation pin9 low or GND pin6 high impedance				
Frequency Stability							
Versus temperature		-40°C to 85°C, ref to (f _{max} +f _{min})/2			±1.0	ppm	
Versus supply voltage		±5%			±0.25	ppm	
Versus Load		±5%			±0.05	ppm	
G-sensitivity		per axis		2.0		ppb/G	
Tolerance at 25°C			0		+1.0	ppm	
First Year Aging		@+40°C			±1.0	ppm	
Phase noise		100 Hz		-109		dBc/Hz	
		1000 Hz		-133			
		10 KHz		-149			
		100 KHz		-153			
Environmental Conditions							
Operating temperature range	-40°C to +85°C						
Storage temperature range	-55°C to +105°C						
Reflow Profiles	≤260°C over 10 sec. Max. as per IPC/JEDEC J-STD-020C						
Moisture sensitivity	Level 1(unlimited)						

Environmental Conditions

Test	IEC 60068 Part...	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	MIL-PRF-55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc Fine leak: Test Qk
Solderability	2-20	5.6.3	208H		3.6.52	Test Ta method 1
Resistance to soldering heat	2-58		210F		3.6.48	Test Td ₁ method 2 Test Td ₂ method 2
Shock	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axis 100 g 6 ms half-sine pulse
Vibration sinusoidal	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axis, 1 oct / min 10 Hz – 55 Hz 0, 75 mm; 55 Hz – 2 kHz 10g
Vibration random	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance tests			108A			
- Aging		5.7.1			4.8.35	30 days @ +85°C, OCXO @ +25°C 1000 h, 2000 h, 8000 h @ +85°C
- Extended aging		5.7.2				