



Features and Benefits

High frequency stability (up to ±0.28ppm over -40°C to +85°C)
(LV)CMOS Output
SMD Miniature package

Typical Applications

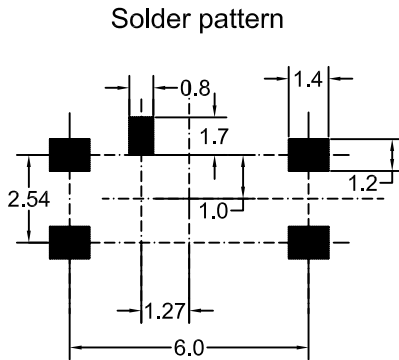
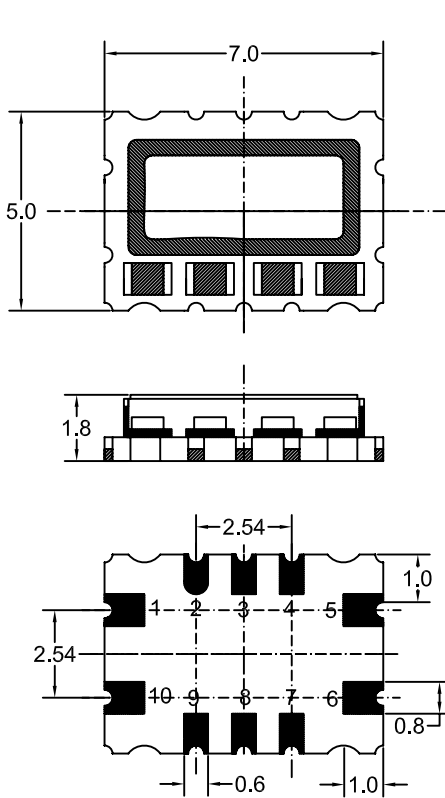
UHF Synthesizers
SATCOM System
Portable Microwave Applications

Description

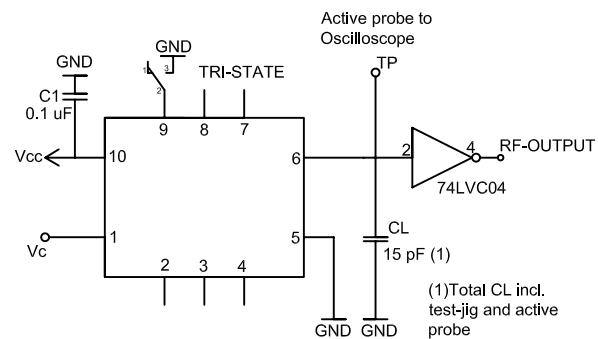
TCXO7500BT-50MHz-A-V offers wide temperature operation from -40°C to +85°C with outstanding frequency stability and low phase noise performance.

Mechanical Drawing & Pin Connections

Drawing No: MD1) 00+) -)



Test Circuit



Pin Function

- #1 Vc(EFC)
- #5 GND
- #6 Output
- #9 NC or Tri-state
- #10 Vcc

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

Unit in mm
1mm = 0.0394 inches



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H7 LC+) (\$6 H!) \$A <n!5 !J
 High reliable, STRATUM-III TCXO

Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			50		MHz	
Output			(LV)CMOS				
Output Level			V _{OH} ≥ 0.9 x V _{cc} V _{OL} ≤ 0.1 x V _{cc}				
Output load					15	pF	
Power Supply							
Voltage	V _{cc}	±5%		3.30		V	
Current Consumption			2		7	mA	
Frequency Control*							
Control voltage range	V _c		0.5		2.5	V	
Tuning range			±5			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	-0.28		+0.28	ppm	
Holdover stability		over 24 hours	≤ ±0.37			ppm	Including, frequency stability, vs. temperature, supply change of ±1 % and aging over 24 hours
Tolerance at 25°C			0		+1.0	ppm	
First Year Aging		@+40°C	-1.0		+1.0	ppm	
15 Years Aging		@+40°C	-3.5		+3.5	ppm	
Overall		Including, frequency stability vs. temperature, tolerance @+25°C, aging 15 years, supply & load variation	≤ ±4.6			ppm	
Phase noise (typical value for 40 MHz)		100 Hz		-110		dBc/Hz	
		1000 Hz		-133			
		10 KHz		-139			
		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
- Extended aging		5.7.2				1000 h, 2000 h, 8000 h @ +85°C