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COSPAS SARSAT compliant CMOS TCXO

Features and Benefits

- Frequency range: 26MHz
- Supply voltage: 3.3V
- Steady current: 3.2mA Max
- Output waveform: CMOS
- Frequency stability vs. operating temperature: ± 0.2 ppm
- Aging: ± 1.0 ppm per year
- Phase noise@100KHz: -155dBc/Hz
- Operating temperature: -40°C to +55°C
- Size: 5x3.2x1.7mm

Typical Applications

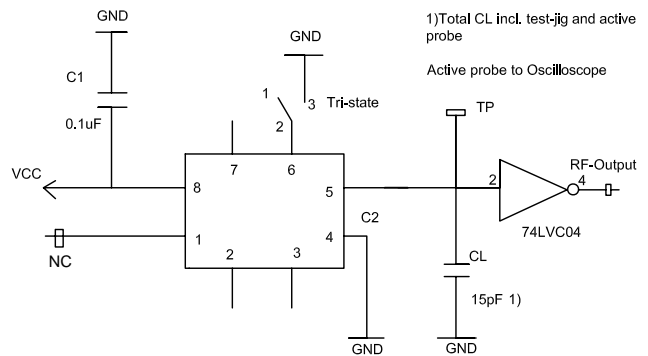
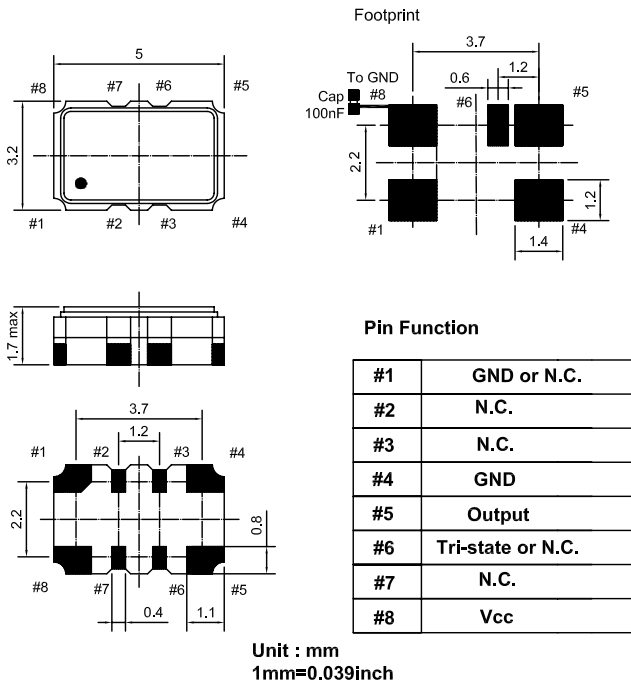
Emergence beacon class 1

Description

TCXO5300BT-CS-26MHz-A offers wide temperature operation from -40°C to +55°C with outstanding frequency stability and low phase noise performance.

Mechanical Drawing & Pin Connections

Drawing No: A8 % \$\$\$ (!+





Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			26		MHz	
Output			CMOS				
Output Level			V _{OH} ≥ 0.9 * V _{cc} V _{OL} ≤ 0.1 * V _{cc}				
Output Load				10		pF	
Symmetry (Duty)		@ ½ Vdc	45		55	%	
Power Supply							
Voltage	V _{cc}	±5%		3.3		V	
Supply Current		output disable		200	3.2	mA	
Start up Time					2	ms	
Tri-state Function		pin #6 > 2.1 V or open pin #6 < 0.9 V or GND	pin #5 → oscillation pin #5 → high impedance				
Frequency Stability							
Versus Temperature		-40°C to +55°C, ref to (F _{max} +F _{min})/2			±0.2	ppm	Class 1 beacon
Tolerance at 25°C					±0.5	ppm	
Versus Supply Voltage		±5% change			±0.01	ppm	
Versus Load		±10% change			±0.05	ppm	
First Year Aging					±1.0	ppm	
10 Years Aging					±3.0	ppm	
Medium-term stability		According the IAW C/S T.007 and C/S IP TCXO					
Mean slope ΔF/dt after 15 min power-up:							
steady state		T = const.			±0.7	ppb/min	
during temperature ramp		ΔT/dt = ± 5 °C/hour			±1.7	ppb/min	
Residual ΔF (r.m.s.) from slope		over 18 points			2.0	ppb	
Phase noise		10 Hz			-90	dBc/Hz	
		100 Hz			-115		
		1000 Hz			-135		
		10 KHz			-150		
		100 KHz			-155		
Short-Term Stability	ADEV	Tau = 1 second			1x10 ⁻¹⁰		
Environmental Conditions							
Operating temperature range	-40°C to +55°C						
Storage temperature range	-55°C to +105°C						
Reflow conditions per JEDEC J-STD-020	260 °C maximum during 10 sec. Max.						

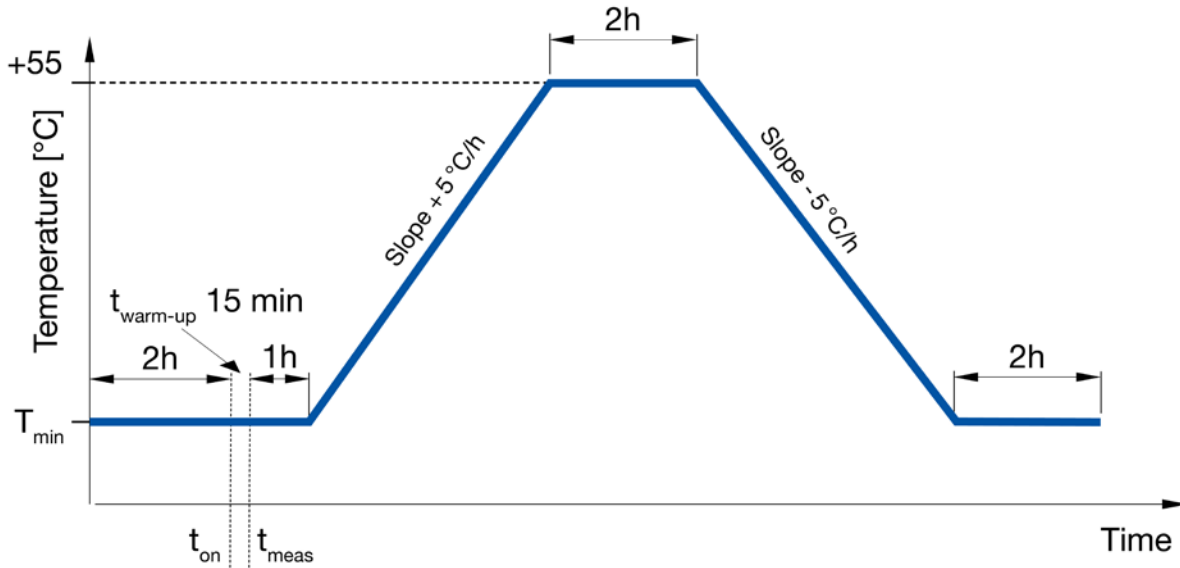
Environmental Conditions

Test	Reference STD.	Test conditions (IEC)
Vibration sinusoidal	IEC 60028-2-6 IEC 60679-1-5.6.7	Test Fc, 30 min per axis 10 Hz – 55 Hz at 0.75 mm, 55 Hz – 2 kHz at 10 g
Shock	IEC 60028-2-27 IEC 60679-1-5.6.8	Test Ea, 3 x per axis at 100 g, 6 ms, half-sine pulse
Soldering	IEC 60028-2-20 IEC 60028-2-58 IEC 60679-5.6.3	Test Ta 260 °C Method 1 Test Tb Method 1A, 5s



Medium Term Stability

Frequency stability measurement procedure according the COSPAS/SARSAT T.001



- Note #1:
- T_{min} = -40 °C (Class 1 beacon)
 - T_{min} = -20 °C (Class 2 beacon)
 - T_{ON} = beacon turn-ON time after 2 hours “cold soak”
 - T_{meas} = start time of frequency stability measurement (TON + 15 min)

- Note: #2 The 2h and 1h warm-up and stabilisation times are for type approval test of complete beacon. For testing of TCXO these times may be shortened accordingly.