



Features and Benefits

- Less than +/- 200 ppb stability over temperature
- Less than 0.1 ppb Allan Deviation
- 3.3V ; Less than 4 mA.
- Medium term stability meets Rescue Beacon standards

Typical Applications

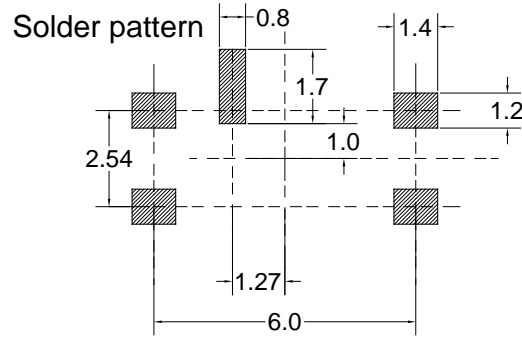
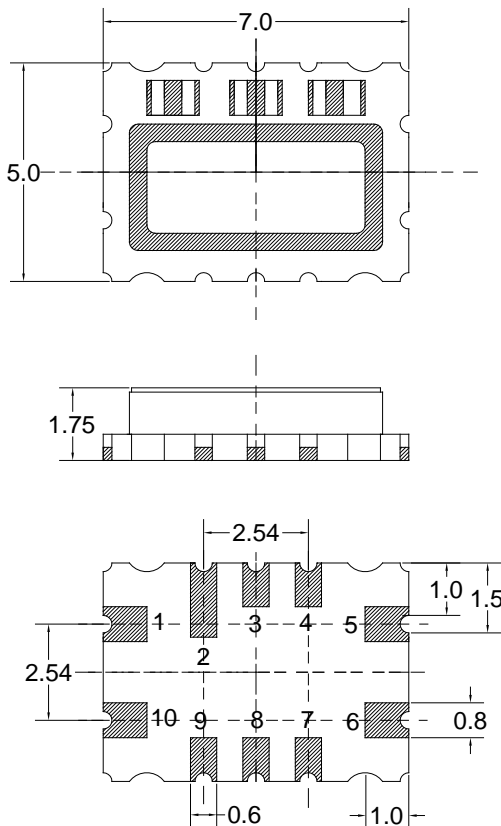
Rescue Beacons

Description

This custom frequency TCXO is specifically designed for the COSPAS SARSAT rescue beacon market.

Mechanical Drawing & Pin Connections

Drawing No: MD150075-1



Pin function

- #1 Do not connected
- #5 GND
- #6 Output
- #9 Tri-state(Enable)
- #10 Vdc

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



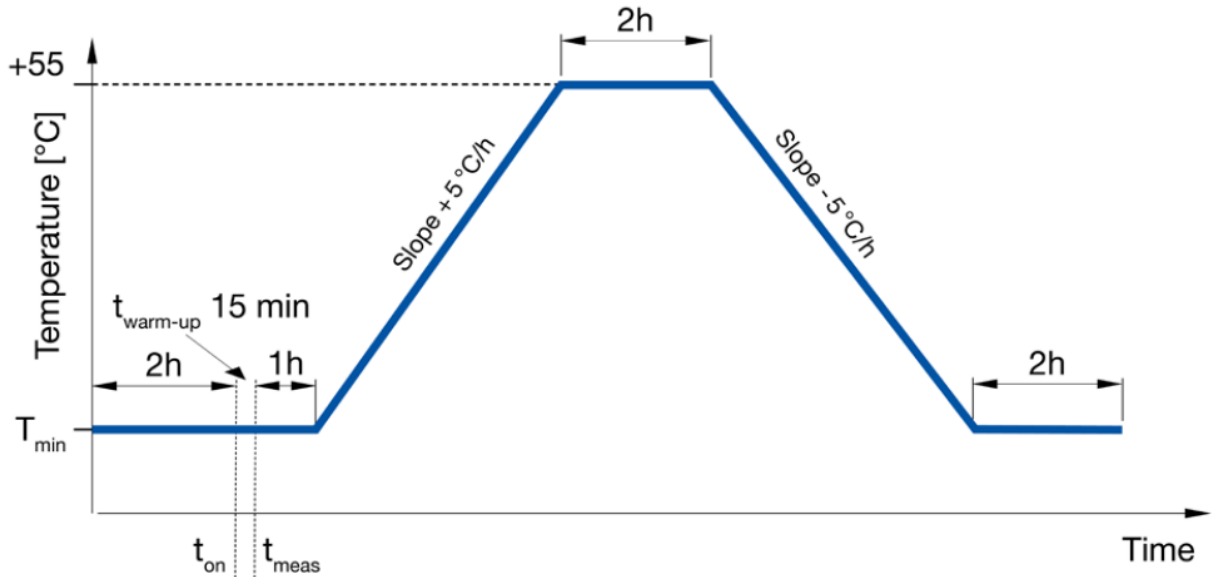
Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	F _{nom}			12.6883750		MHz	
Output signal		VOH > 0.9*Vdc, VOL < 0.1*Vdc	CMOS				
Output Load			14.25	15	15.75	pF	
Summetry (Duty)		@ ½ Vdc			2.0	ms	
Tri-state function		pin # 6: oscillation pin # 6: high Impedance	pin # 9 high or open pin # 9 low				
Power Supply							
Supply Voltage	V _{cc}		3.135	3.3	3.465	V	
Supply Current			45% ~ 55%				
Frequency Stability							
VS. Temperature		From -20°C to +55°C Ref. to (F _{MAX} + F _{MIN})/2			+/-0.2	ppm	
Tolerance at +25°C		Frequency at +25°C, 1hour after 2 times reflow			+/-0.5	ppm	
VS. Supply Voltage		+/-5% change at 25°C			+/-0.1	ppm	
VS. Load Change		+/-5% change at 25°C			+/-0.1	ppm	
Year Aging		First year			+/-1.0	ppm	
		10 years			+/-3.0	ppm	
Allan variance (ADEV)		@ τ = 0.1 ~ 10 sec.			0.1	ppb	
Medium-term stability:		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		Δ T/dt = ± 5 °C/hour			1.7	ppb/min	
Residual ΔF (r.m.s.) from slope		over 18 points			2.0	ppb	
Environmental Conditions							
Parameter	Reference Std.		Test Condition				
Operating Temperature range	-20°C to +55°C						
Storage Temperature range	-55°C to +105°C						
Vibration sinusoidal	IEC 60028-2-6	IEC 60679-1-5.6.7	Test Fc, 30 min per axis 10 Hz – 55 Hz 0.75mm, 55 Hz – 2 KHz 10g				
Shock	IEC 60028-2-27	IEC 60679-1-5.6.8	Test Ea, 3 x per axes 100 g, 6 ms half-sine pulse				
Solderability	IEC 60028-2-20 IEC 60028-2-58	IEC 60679-5..6.3	Test Ta(235 +/-2) °C Method 1 Test Tb Method 1A, 5s				



Medium term stability

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



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

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.