Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077
TEL: 281-870-8822EMAIL:Sales@DynamicEngineers.com

TCXO7500Z-series
COSPAS SARSAT compliant CMOS TCXO

Features and Benefits

Meets all Medium-term stability requirements of COSPAS SARST: Class 1/2
Custom frequency AT-strip resonator optimized for this application
CMOS output
3.3V; Less than 4mA
Less than 1E-10 ADEV @ tau = 0.1 to 10 seconds
Less than ±200ppb over -40°C (for Class 1) or 20°C (for Class 2) to +55°C
Tri-state function

Typical Applications

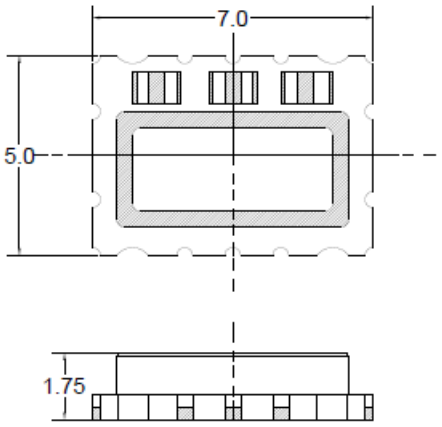
ELT Emergency Beacons
Other frequencies available for EPIRB and PLB beacon systems

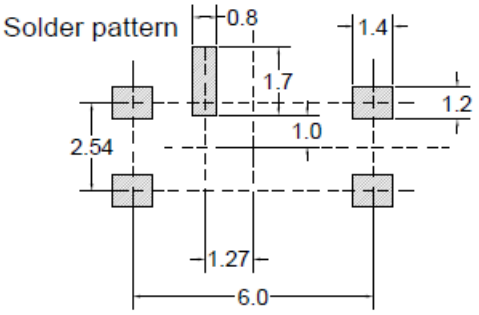
Description

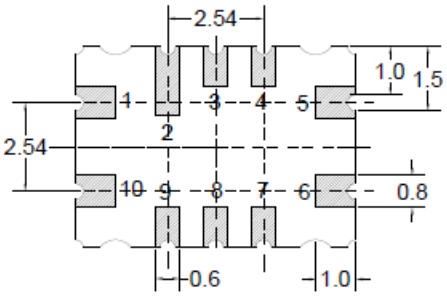
5 x 7 mm SMD. TCXO platform optimized for crystal angle and compensation technique to meet the specific stability requirements of ELT (Emergency Locator Transmitter) applications.

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

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Specifications

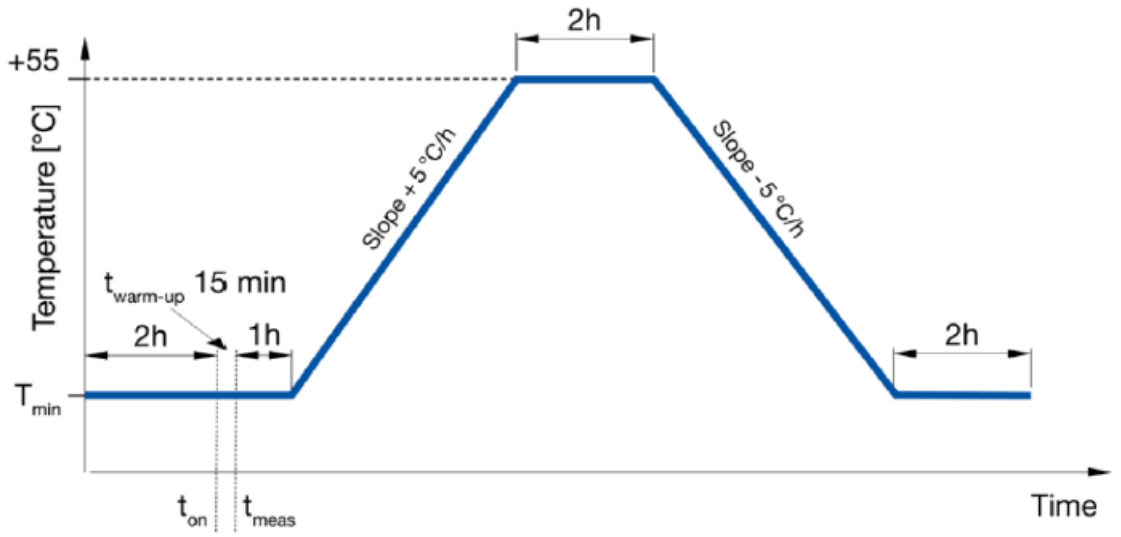
TCXO Specification	Sym	Condition	Value Min.	Value Typ.	Value Max.	Unit	Note
Nominal Frequency	Fnom	Customized Frequency Available				MHz	
Output Waveform				CMOS			
Output Level High			2.97			V	
Output Level Low					0.33	V	
Output Load		+/-5%		15		pF	
Symmetry (Duty)		@ ½ Vdc	45		55	%	
Tri-state function		pin # 6: oscillation pin # 6: high impedance	pin # 9 high or open pin # 9 low				
Power Supply							
Supply Voltage	Vcc		3.135	3.3	3.465	V	
Supply Current					4	mA	
Frequency Stability							
VS. Temperature		From -20°C to +55°C Ref. to (FMAX + FMIN)/2			+/-0.2	ppm	
Tolerance at +25°C		@+25°C			+/-0.5	ppm	
Tolerance after Reflow		Measured 8hours after reflow			+/-1	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			0.7	ppb/min.	T = const
		During temperature ramp			1.7	ppb/min.	△T/dt = ± 5 °C/hour
Residual ΔF (r.m.s.) from Slope					2.0	ppb	Over 18 points

Environmental Conditions

Parameter	Reference Std.		Test Condition
Operating Temperature range	-40°C (Class 1) or -20°C (Class 2) 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
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: Tmin = -40 °C (Class 1 beacon)
Tmin = -20 °C (Class 2 beacon)
TON = beacon turn-ON time after 2 hours "cold soak"
Tmeas = 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.