



## Features and Benefits

Frequency range: 38MHz

Supply voltage: 3.3V

Current: 24mA

Output waveform: CMOS

Frequency stability vs. temperature:  $\pm 1.0$ PPM from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

Aging:  $\pm 2$ PPM first year

Phase noise:  $-152\text{dBc/Hz}@1\text{MHz}$ :

Operating temperature:  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

Size: 7x5x2.5 mm

## Typical Applications

Portable Wireless Communications

Mobile Test Equipment

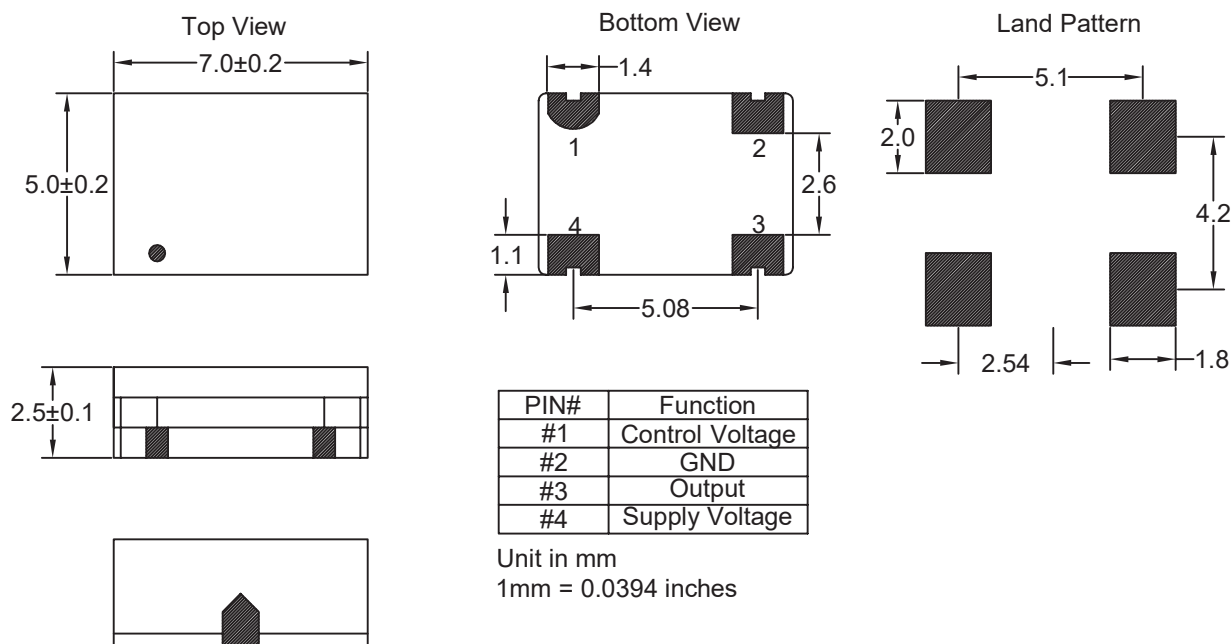
Beacons and Rescue Systems

## Description

TTCXO7501BL-38MHz-A-V is the 38MHz CMOS output TCXO. The frequency stability can less than  $\pm 1.0$ PPM from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  operating temperature. It can be widely used in the portable communication device.

## Mechanical Drawing & Pin Connections

Drawing No: MD220011-2





## Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	f <sub>0</sub>			38		MHz	
RF Output							
Output Waveform			CMOS				
Load				15		pF	
Output Level High			90% V <sub>cc</sub>			V	
Output Level Low					10% V <sub>cc</sub>	V	
Duty Cycle		±5%		50%		%	@50% V <sub>cc</sub>
Rise & Fall Time		10%<-->90% waveform		1.5	3.0	ns	
Start-up Time					5	ms	
Power Supply							
Voltage	V <sub>cc</sub>	±5%		3.3		V	
Current				24		mA	
Control Voltage							
Control Voltage			0.5	1.5	2.5	V	
Frequency Pulling Range			±8			ppm	
Linearity					10	%	
Bandwidth		Measured at -3dB	10			KHz	
Frequency Stability							
Initial Tolerance		@+25°C±2°C			±2.0	ppm	
Vs. Temperature		-40°C to +70°C			±1.0	ppm	
Vs. Supply Voltage		±5% change			±0.2	ppm	
Vs. Load		±10% change			±0.2	ppm	
Vs. Reflow		One reflow and measured after 24hours afterward			±1.0	ppm	
Aging @25°C		First year			±2.0	ppm	
		Over 10 years			±10.0	ppm	
Phase Noise		@10Hz		-79		dBc/Hz	
		@100Hz		-102			
		@1KHz		-125			
		@100KHz		-131			
		@1MHz		-152			
Environmental Conditions							
Operating temperature range		-40°C to +70°C					
Storage temperature range		-50°C to +100 °C					