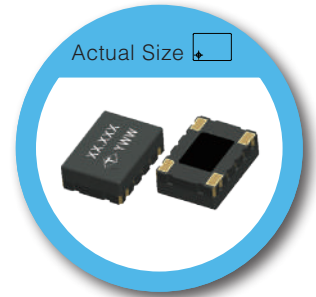


TT-L Type Ultra Low G Sensitivity TCXO

7.0 x 5.0 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator



RoHS Compliant

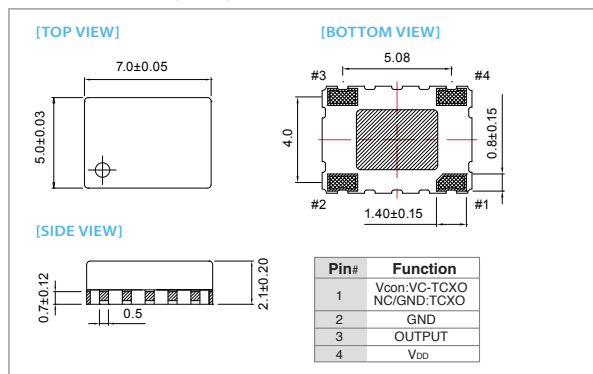
FEATURE

- Supply Voltage: 3.3V, 5.0V Supply Options
- Frequency Stability: 0.5ppm at -40°C to 85°C
- Clock Output: Clipped Sine Waveform and CMOS Options
- Output Frequency Support from 10MHz to 52MHz
- Low G Sensitivity: < 0.5ppb/g (<0.3ppb/g Available)
- Phase Jitter: < 0.5ps (at 12kHz to 5MHz Frequency Offsets)
- Temperature Range: -40°C to 85°C
- Pb-free/RoHS Compliant

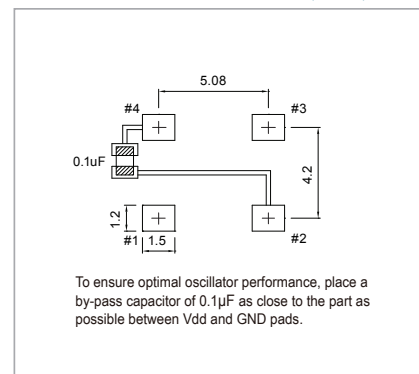
TYPICAL APPLICATION

- Guidance
- Avionics
- Precision GNSS/Positioning
- Real Time Kinematic (RTK)

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	5.0V		3.3V		Unit	
	Min.	Max.	Min.	Max.		
Supply Voltage Variation (VDD)	VDD-10%	VDD+10%	VDD-10%	VDD+10%	V	
Frequency Range	10	52	10	52	MHz	
Standard Frequency	10, 20				MHz	
Frequency Tolerance*	-	±2.0	-	±2.0	ppm	
Frequency Stability	vs Supply Voltage (±10%) Change	±0.1	-	±0.1	ppm	
	vs Load (±10%) Change	±0.05	-	±0.05	ppm	
	vs Aging (@1 st Year)	±1.0	-	±1.0	ppm	
CMOS Output	Supply Current (IDD)	6	-	6	mA	
	Output Level	Output High (Logic "1")	90%VDD	-	90%VDD	V
		Output Low (Logic "0")	-	10%VDD	-	10%VDD
	Duty Cycle	45	55	45	55	%
Output Loading	-	15	-	15	pF	
Clipped Sine Wave	Supply Current (IDD)	3.5	-	3.5	mA	
	Output Level (Vp-p)	0.8	-	0.8	-	V
Phase Noise (at 10MHz)	Output Loading	10KΩ//10pF				
	@ offset 10 Hz	-107				dBc/Hz
	@ offset 100 Hz	-135				dBc/Hz
	@ offset 1K Hz	-149				dBc/Hz
	@ offset 10K Hz	-154				dBc/Hz
G Sensitivity (Gamma Vector, 3-axes)	-	0.3	-	0.3	ppb/g	
Start Time	-	2	-	2	mSec	
Storage Temp. Range	-55	+125	-55	+125	°C	

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.
 *Frequency at 25°C, 1 hour after reflow.

FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm			
	±0.28	±0.5	±1.0	±2.5
-20~+70	△	○	○	○
-40~+85	×	○	○	○

*○: Available △: Conditional X: Not available

Note: not all combination of options are available. Other specifications may be available upon request.