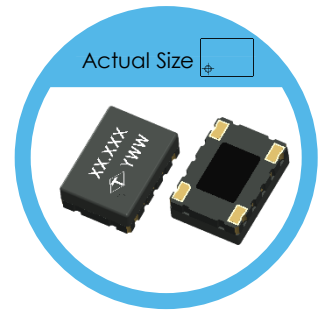


TT-L Type Ultra Low G Sensitivity 7.0 x 5.0 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator



RoHS Compliant

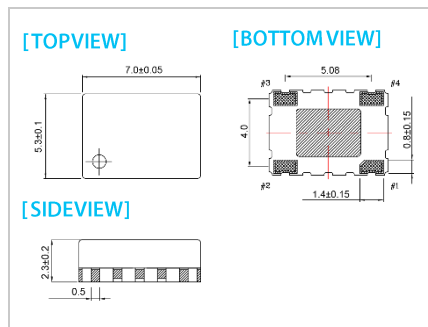
FEATURES

- Frequency Stability: 0.1ppm at -40°C to 85°C
- Low G Sensitivity: 0.3ppb/g typ.
- RMS Jitter: < 0.5ps (at 12kHz to 5MHz Frequency Offsets)

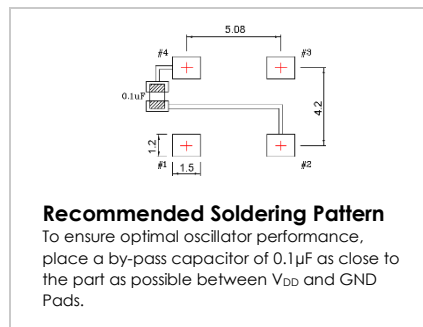
TYPICAL APPLICATION

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

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



PIN FUNCTION (mm)

PIN#	Name	Type	Function and Remarks
1	VC	Input	Voltage control
2	GND	Power-	GND pin
3	OUT	Output	Frequency output
4	V _{DD}	Power+	Power Supply, V _{DD} pin

ELECTRICAL SPECIFICATION

Parameter	2.5V / 3.3V				Test Condition	
	Min.	Typ.	Max.	Unit		
Supply Voltage Variation (V _{DD})	V _{DD} - 5%		V _{DD} + 5%	V		
Frequency Range	10		52	MHz		
Standard Frequency	10, 20			MHz	Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.	
Frequency Tolerance			±2.0	ppm	Frequency at 25°C, 1 hour after reflow.	
Frequency Stability	vs Supply Voltage (±10%) Change		±0.1	ppm		
	vs Load (±10%) Change		±0.1	ppm		
	vs Aging (@1 st Year)		±1.0	ppm		
CMOS Output	Supply Current (I _{DD})		8	mA		
	Output Level	Output High (Logic "1")	90%V _{DD}		V	
		Output Low (Logic "0")		10%V _{DD}		V
	Duty Cycle	45		55	%	
Output Loading			15	pF		
Clipped Sine Wave	Supply Current (I _{DD})		5	mA		
	Output Level (V _{p-p})	0.8			V	
	Output Loading		10 KΩ // 10pF			
Phase Noise @ 10MHz	@ offset 10 Hz		-107		dBc/Hz	
	@ offset 100 Hz		-135		dBc/Hz	
	@ offset 1K Hz		-149		dBc/Hz	
	@ offset 10K Hz		-154		dBc/Hz	
RMS Jitter(at 12kHz to 5MHz Frequency Offsets)			0.5	ps		
G Sensitivity (Each Axes)		0.3	0.5	ppb/g		
Start Time			10	mSec		
Control Voltage Range (VCTCXO)	0.5		2.5	V		
Pulling Range (VCTCXO)	±5.0			ppm		
Vc Input Impedance (VCTCXO)	100			kΩ		
Storage Temp. Range	-55		+125	°C		

FREQ. STABILITY vs. TEMP. RANGE

Temp.(°C)	ppm				
	±0.05	±0.1	±0.2	±0.28	±0.5
-20 ~ +70	△	○	○	○	○
-40 ~ +85	X	○	○	○	○

○: Available △:Conditional X: Not available

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

Specifications subject to change without notice.