

# TX Type

## 3.2 x 2.5 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator

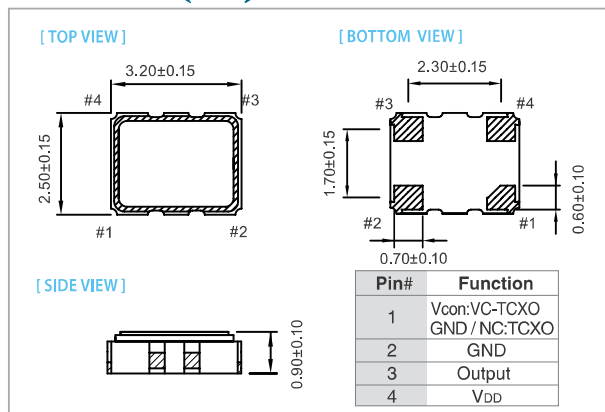
### FEATURE

- Typical 3.2 x 2.5 x 0.9 mm SMD.
- For automatic assembly.
- Compactness and lightweight.
- Low power consumption.
- VCTCXO available.
- Low thickness

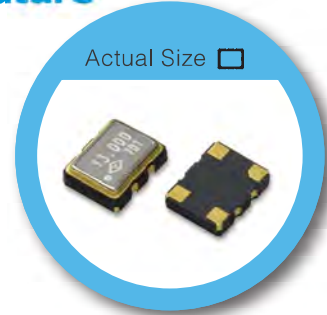
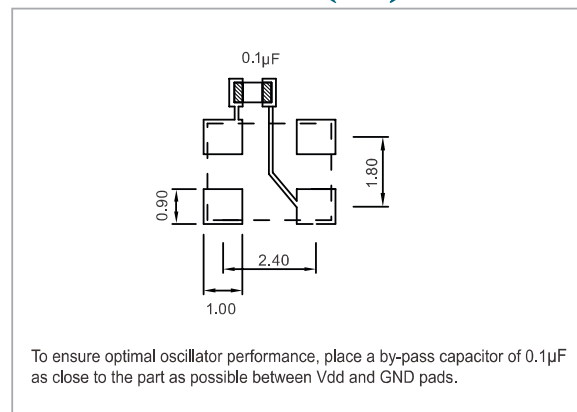
### TYPICAL APPLICATION

- GPS
- WiMAX, WLAN
- Mobile Phone

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



RoHS Compliant

### ELECTRICAL SPECIFICATION

Parameter	3.3 / 3.0 / 2.8 V		2.5 V		1.8 V		Unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD)	2.66	3.465	2.375	2.625	1.71	1.89	V
Frequency Range	10	52	10	52	10	52	MHz
Standard Frequency	10, 12.8, 13, 16.367667, 16.368, 16.369, 19.2, 19.44, 20, 25, 26, 27, 30, 30.72, 32, 38.4						
Frequency Tolerance*	-	±2.0	-	±2.0	-	±2.0	ppm
Frequency stability							
Vs Supply Voltage (±5%) change	-	±0.2	-	±0.2	-	±0.2	ppm
Vs Load (±10%) change	-	±0.2	-	±0.2	-	±0.2	
Vs Aging (@ 1st year)	-	±1.0	-	±1.0	-	±1.0	
Supply Current	10 MHz ≤ Fo ≤ 26 MHz		10 MHz ≤ Fo ≤ 26 MHz		10 MHz ≤ Fo ≤ 26 MHz		mA
	26 MHz < Fo ≤ 52 MHz		26 MHz < Fo ≤ 52 MHz		26 MHz < Fo ≤ 52 MHz		
Output Level (Clipped sine wave)	0.8	-	0.8	-	0.8	-	Vp-p
Load	10KΩ//10pF		10KΩ//10pF		10KΩ//10pF		
Control Voltage Range (VCTCXO)	0.5	2.5	0.4	2.4	0.3	1.5	V
Pulling Range (VCTCXO)	±5.0	-	±5.0	-	±5.0	-	ppm
Vc Input Impedance (VCTCXO)	500	-	500	-	500	-	kΩ
Phase Noise @ 19.2 MHz	100 Hz	-115	100 Hz	-115	100 Hz	-115	dBc/Hz
	1 kHz	-135	1 kHz	-135	1 kHz	-135	
	10 kHz	-148	10 kHz	-148	10 kHz	-148	
Start time	-	2	-	2	-	2	mSec
Storage Temp. Range	-40	85	-40	85	-40	85	°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	±0.5	±1.0	±1.5	±2.0	±2.5
-20 ~ +70	○	○	○	○	○	○
-30 ~ +85	○	○	○	○	○	○
-40 ~ +85	○	○	○	○	○	○

\* ○: Available △: Conditional X: Not available

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