

# TY Type

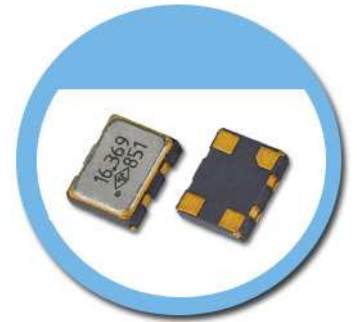
## 2.5 x 2.0 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator

### FEATURE

- Typical 2.5 x 2.0 x 0.75 mm ceramic SMD package
- For automatic assembly
- Compactness and light weight
- VCTCXO available
- Low thickness

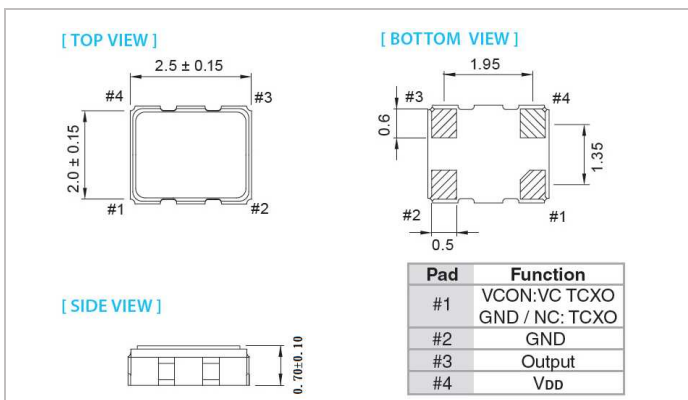
### TYPICAL APPLICATION

- GPS
- WiMAX, WLAN
- Mobile Phone

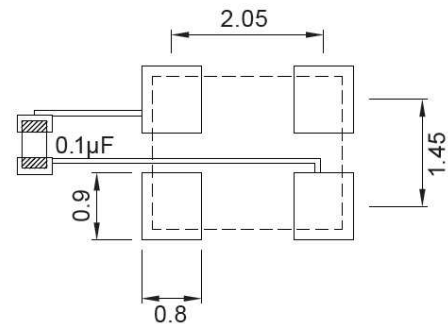


RoHS Compliant Standard

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

Parameter	2.8V		2.5V		1.8V		Unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD) 5%	2.66	2.94	2.375	2.625	1.71	1.89	V
Frequency Range	13	52	13	52	13	52	MHz
Standard Frequency	16.367667, 16.368, 16.369, 19.2, 19.68, 20, 26, 40						
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	ppm
Vs Aging	-	±1.0	-	±1.0	-	±1.0	ppm/year
Supply Current	13 MHz ≤ F0 < 26 MHz		-		-		mA
	26 MHz ≤ F0 ≤ 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)	0.4	2.4	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		-115		-115		dBc/Hz
1 KHz	-135		-135		-135		
10 KHz	-148		-148		-148		
Start Time	-	2	-	2	-	2	mSec
Storage Temp. Range	-55	125	-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

Packing: Tape & Reel 3000 pcs per Reel

### FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm					
		±0.5	±1.0	±1.5	±2.0	±2.5
0~+55		○	○	○	○	○
-10~+60		○	○	○	○	○
-20~+70		○	○	○	○	○
-30~+85		△	○	○	○	○
-40~+85		△	△	○	○	○

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