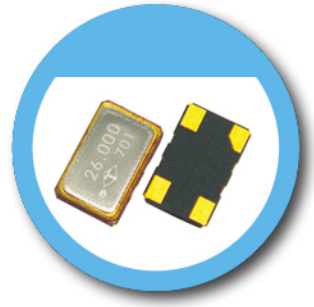
TW Type
5.0 x 3.2 mm SMD High Precision Voltage Controlled Temperature Compensated Crystal Oscillator



RoHS Compliant Standard

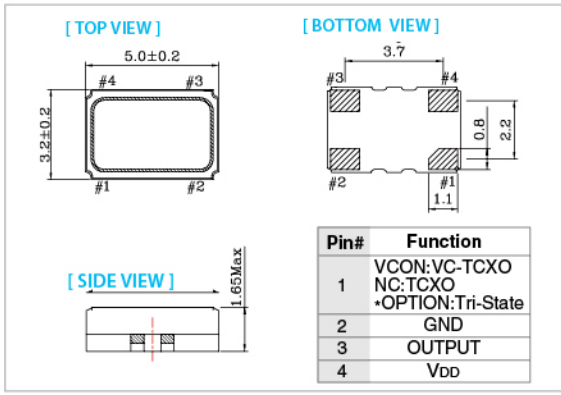
FEATURE

- Typical 5.0 x 3.2 x 1.55 mm ceramic SMD package.
- ±0.28ppm, -40°C~+85°C ; ±0.1ppm, -20°C~+70°C
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

TYPICAL APPLICATION

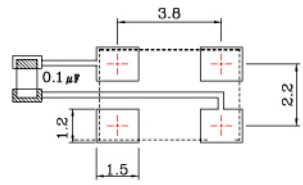
- Base Stations, Stratum 3
- Femtocell

DIMENSION (mm)



Pin#	Function
1	VCON:VC-TCXO NC:TCXO *OPTION:Tri-State
2	GND
3	OUTPUT
4	VDD

SOLDER PAD LAYOUT (mm)



☆To ensure optimal oscillator performance, place a by-pass capacitor of 0.1uF as close to the part as possible between Vdd and GND pads.

ELECTRICAL SPECIFICATION

Parameter		5.0 V		3.3 V		Unit
		Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD) 5%		4.75	5.25	3.135	3.465	V
Frequency Range		10	40	10	40	MHz
Standard Frequency (for CMOS)		10, 12.8, 19.2, 20, 26, 30.72				
Standard Frequency (for Clipped Sine)		10, 12.8, 19.2, 20, 26, 30.72				
Frequency Tolerance*		–	±2.0	–	±2.0	ppm
Frequency Stability						
	Vs Supply Voltage (±5%) change (for CMOS)	–	±0.2	–	±0.2	ppm
	Vs Load (±10%) change	–	±0.2	–	±0.2	
	Vs Aging (@1st year)	–	±1.0	–	±1.0	
Supply Current (CMOS output)		–	6	–	6	mA
Supply Current (Clipped Sine Wave)		–	3.5	–	3.5	
Output Level (CMOS)	Output High (Logic "1")	90%VDD	–	90%VDD	–	V
	Output Low (Logic "0")	–	10%VDD	–	10%VDD	
	Duty	45	55	45	55	%
Output Level (Clipped Sine Wave)		0.8	–	0.8	–	Vp-p
Lead (CMOS)		15pF		15pF		
Lead (Clipped Sine Wave)		10 KΩ // 10pF		10 KΩ // 10pF		
Control Voltage Range (VCTCXO)		0.5	2.5	0.5	2.5	V
Pulling Range (VCTCXO)		±5.0	–	±5.0	–	ppm
Vc Input Impedance (VCTCXO)		100	–	100	–	KΩ
Phase Noise @ 12.8 MHz	100 Hz	125		125		dBc/Hz
	1 KHz	145		145		
	10 KHz	150		150		
Start time		–	2	–	2	mSec
Tri-State (option)	Disable	–	0.3VDD	–	0.3VDD	V
	Enable	0.7VDD	–	0.7VDD	–	
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.
Packing: Tape & Reel, 1000/3000 pcs per Reel.

FREQ. STABILITY vs. TEMP. RANGE

Temp.(°C) \ ppm	±0.14	±0.28	±0.37	±0.5
0 ~ +55	○	○	○	○
-10 ~ +60	○	○	○	○
-20 ~ +70	○	○	○	○
-40 ~ +85	×	○	○	○

* ○: Available △:Conditional X: Not available

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