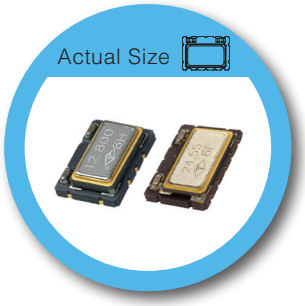
TS/TC Type

7.0 x 5.0 mm SMD High Precision Voltage Controlled Temperature Compensated Crystal Oscillator



FEATURE

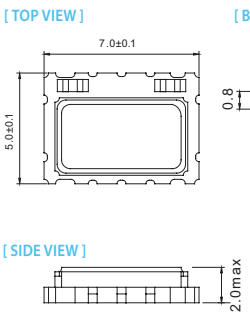
- Typical 7.0 x 5.0 x 1.85 mm ceramic SMD package.
- High Precision for -40°C ~ +85°C, ±0.28ppm.
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

TYPICAL APPLICATION

- Femtocell , Base Stations
- WLAN/WiMax/WIFI, Wireless Communications
- Mobile Phone

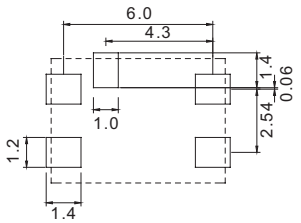
RoHS Compliant Standard

DIMENSION (mm) - TS

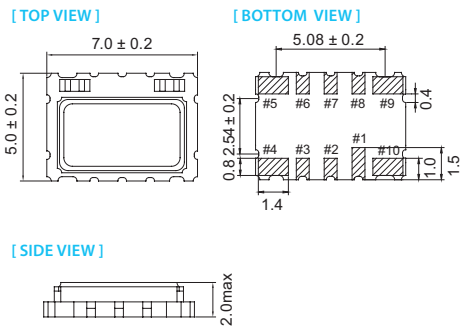


Pin	Function
1	NC
2	NC
3	NC
4	GND
5	CMOS/Clipped Sinewave Output
6	NC
7	NC
8	Tri-State Control
9	VDD
10	VCON:VC.TCXO NC:TCXO

SOLDER PAD LAYOUT (mm)

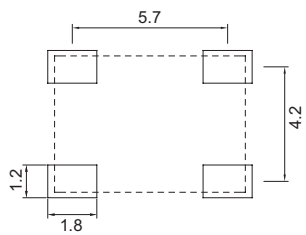


DIMENSION (mm) - TC



Pad	Function
1	NC
2	NC
3	NC
4	GND
5	Output
6	NC
7	NC
8	NC
9	Vdd
10	VCON:VCTCXO GND:TCXO

SOLDER PAD LAYOUT (mm)



FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C) \ ppm	±0.05	±0.1	±0.14	±0.2	±0.28	±0.37	±0.5
0 ~ +55	○	○	○	○	○	○	○
-10 ~ +60	○	○	○	○	○	○	○
-20 ~ +70	△	○	○	○	○	○	○
-40 ~ +85	×	×	×	△	○	○	○

* ○: Available △:Conditional X: Not available

TS/TC Type
7.0 x 5.0 mm SMD High Precision Voltage Controlled Temperature Compensated Crystal Oscillator

ELECTRICAL SPECIFICATION

Parameter	5.0 V		3.3 V		Unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (V_{DD}) 5%	4.75	5.25	3.135	3.465	V
Frequency Range	5	40	5	40	MHz
Standard Frequency (for CMOS)	5, 6.4 ,8 , 8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				
Standard Frequency (for Clipped Sine)	8.192, 10, 12.5, 12.8, 16, 16.384, 19.44, 25				
Frequency Tolerance*	–	±2.0	–	±2.0	ppm
Frequency Stability					
Vs Supply Voltage (±5%) change (for CMOS)	–	±0.3	–	±0.3	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)					V
Output High (Logic "1")	90%V_{DD}	–	90%V_{DD}	–	
Output Low (Logic "0")	–	10%V_{DD}	–	10%V_{DD}	
Duty	45	55	45	55	%
Output Level (Clipped Sine Wave)	0.8	–	0.8	–	Vp-p
Load (CMOS)	15pF		15pF		
Load (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					dBc/Hz
100 Hz	-120		-120		
1 KHz	-140		-140		
10 KHz	-148		-148		
Start time	–	2	–	2	mSec
Tri-State (option)					V
Disable	–	0.3V_{DD}	–	0.3V_{DD}	
Enable	0.7V_{DD}	–	0.7V_{DD}	–	
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 1000/3000pcs per Reel.