

# **TP Type High Precision and Low G-Sensitivity**

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

## **FEATURES**

- Typical 3.2 x 2.5 x 1.48 mm ceramic SMD package.
- Stratum 3 (Overall ±4.6ppm including 20 years aging.)
- Low G Sensitivity: < 0. 5ppb/g
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

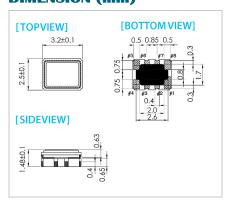
#### **TYPICAL APPLICATION**

- Stratum 3
- Femtocell, Base Stations

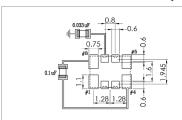
# Actual Size Total Actual Size

**RoHS Compliant** 

# **DIMENSION (mm)**



## **SOLDER PAD LAYOUT (mm)**



#### **Recommended Soldering Pattern**

To ensure optimal oscillator performance, place a by-pass capacitor of  $0.1 \mu F$  as close to the part as possible between  $V_{DD}$  and GND Pads.

# **PIN FUNCTION (mm)**

PIN#	FUNCTION				
1	V <sub>CON</sub> :VC-TCXO				
	NC:TCXO				
2	Do not Connect				
3	Do not Connect				
4	GND				
5	Output				
6	Tri-State				
7	Filter				
8	V <sub>DD</sub>				

#### **ELECTRICAL SPECIFICATION**

Parameter		2.5V / 3.3V					
		Min.	Тур.	Max.	Unit	Test Condition	
Supply Voltage Variation (VDD)			V <sub>DD</sub> - 5%		V <sub>DD</sub> + 5%	V	
Frequency Range		5		52	MHz		
Standard Frequency			20, 25, 40			MHz	Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.
Operating Temp. Range		-20 ~ +70, -40 ~ +85			°C		
Frequency Stability (Overall, 20 Years)					±4.6	ppm	Including calibration @ 25°C, supply voltage V <sub>DD</sub> ±5%, load ±10%, reflow soldering, 20 years aging and frequency stability over temperature.
Frequency Stability Vs Temp. Range					±0.1 (-20~+70°C) ±0.2 (-40~+85°C)	ppm	Ref. to (FMAX+Fmin)/2
Holdover Stability					0.37	ppm	Including 24hours aging , supply voltage V <sub>DD</sub> ±5% and frequency stability over temperature.
Supply Current	CMOS				7.5	mA	
	Clipped Sine Wave				5	mA	
Output Level		Output High (Logic "1")	90%V <sub>DD</sub>			V	
	CMOS	Output Low (Logic "0")			10%V <sub>DD</sub>	V	
		Duty	45		55	%	
	Clipped Sine Wave		0.8			Vp-p	
Load	CMOS			15pF			
	Clipped Sine Wave			10 KΩ // 10pF			
Phase Noise @ 10MHz		@ 100Hz			-130	dBc/Hz	Please add filter capacitor as suggested
	@ 1kHz				-145	dBc/Hz	and 33nF at pin7
	@ 10kHz				-154	dBc/Hz	
G Sensitivity				0.3	0.5	ppb/G	Each Axis, 20-2000Hz
Start Time					10	mSec	
Storage Temp. Range			-55		+125	°C	
VCTCXO	Control Voltage Range		0.5		2.5	V	
	Pulling Range		±5.0			ppm	
	Vc Inpu	ıt Impedance	100			kΩ	