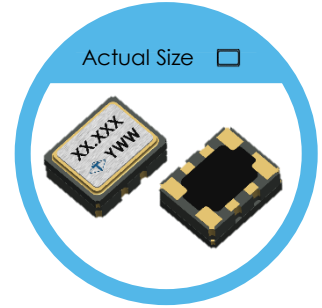


# TP Type High Precision and Low G-Sensitivity 3.2 x 2.5 mm SMD Voltage Controlled Temperature Compensated Crystal Oscillator



RoHS Compliant

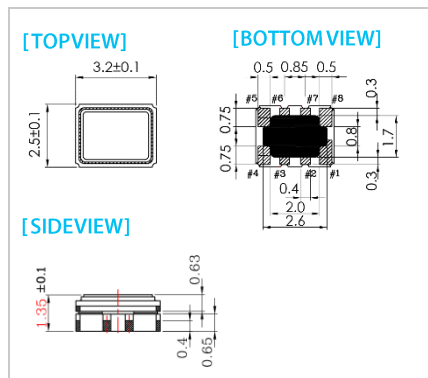
## FEATURES

- Typical 3.2 x 2.5 x 1.35 mm ceramic SMD package.
- Stratum 3 (Overall  $\pm 4.6$ ppm including 20 years aging.)
- Low G Sensitivity:  $< 0.5$ ppb/g
- CMOS and Clipped Sine wave (without DC-cut capacitor) output optional.

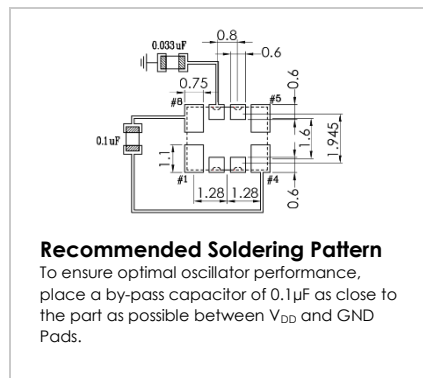
## TYPICAL APPLICATION

- Stratum 3
- Femtocell, Base Stations

## DIMENSION (mm)



## SOLDER PAD LAYOUT (mm)



## 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				Test Condition
	Min.	Typ.	Max.	Unit	
Supply Voltage Variation (V <sub>DD</sub> )	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)			$\pm 4.6$	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			$\pm 0.1$ (-20~+70°C) $\pm 0.2$ (-40~+85°C)	ppm	Ref. to (F <sub>MAX</sub> +F <sub>MIN</sub> )/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	CMOS	Output High (Logic "1")	90%V <sub>DD</sub>	V	
		Output Low (Logic "0")		10%V <sub>DD</sub>	V
	Duty	45	55	%	
Load	Clipped Sine Wave	0.8		Vp-p	
	CMOS		15pF		
Phase Noise @ 10MHz	Clipped Sine Wave		10 KΩ // 10pF		
		@ 100Hz		-130	dBc/Hz
	@ 1kHz		-145	dBc/Hz	
	@ 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	$\pm 5.0$		ppm	
	Vc Input Impedance	100		kΩ	

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

Specifications subject to change without notice.