

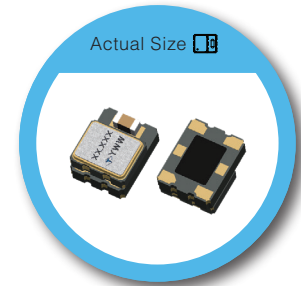
# TX-P Type High Frequency up to 1.5 GHz 3.2 x 2.5 mm SMD Temperature Compensate Crystal Oscillator

## FEATURE

- Low power supply voltage: 3.3V and 2.5V options
- Clock output: CMOS, LVPECL, LVDS options
- CMOS output frequency support from 10MHz to 250MHz
- Differential output frequency support from 10MHz to 1.5GHz
- Low Phase Jitter typical 0.8 pS RMS at 12kHz to 20MHz frequency offsets
- Low current consumption - Pb-free/RoHS compliant
- Frequency Stability  $\pm 2.0$ ppm over  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$

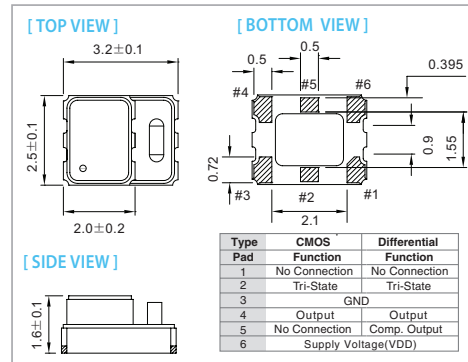
## TYPICAL APPLICATION

- High-Speed Gigabit Ethernet, Fiber Channel, Storages Area Network, SONET
- Enterprise Server, SAS/SATA - Microprocessors/DSP/FPGA
- Broadband Access - Smart Grid

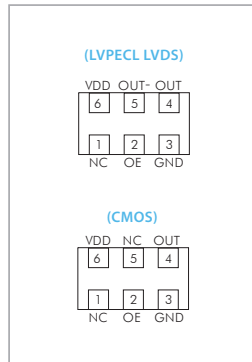


RoHS Compliant

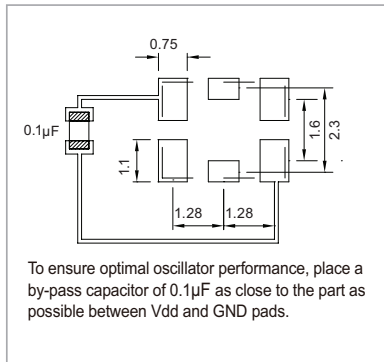
## DIMENSION (mm)



## PIN ASSIGNMENTS



## SOLDER PAD LAYOUT (mm)



## ELECTRICAL SPECIFICATION

Parameter	LVPECL		LVDS		CMOS		Unit	
	Min.	Max.	Min.	Max.	Min.	Max.		
Supply Voltage (Vdd)	3.3V or 2.5V		3.3V or 2.5V		3.3V or 2.5V		V	
Supply Voltage Variation	VDD-5%	VDD+5%	VDD-5%	VDD+5%	VDD-5%	VDD+5%		
Frequency Range	10	1500	10	1500	10	250	MHz	
Supply Current	-	54	-	45	-	40	mA	
Output Level	Output High	VDD-1.03	VDD-0.6	-	1.6	90%VDD	-	V
	Output Low	VDD-1.85	VDD-1.6	0.9	-	-	10%VDD	
Transition Time	Rise / Fall Time	-	0.5 (20%-80%)	-	1.0 (20%-80%)	-	3.0 (10%-90%)	nSec
		45	55	45	55	45	55	%
Startup Time	-	5	-	5	-	5	mSec	
Tri-State mode (Input to Pin 2)	Enable	0.7xVDD	-	0.7xVDD	-	0.7xVDD	-	V
	Disable	-	0.3xVDD	-	0.3xVDD	-	0.3xVDD	
Stand by Current	-	20	-	20	-	20	mA	
Output Loading	50Ω into VDD-2V		100Ω		-		15pF	
Phase Noise	Typ.	Max.	Typ.	Max.	Typ.	Max.		
	1kHz offset	-107	-	-107	-	-111	-	dBc/Hz
At VDD=3.3V, fout=250MHz	10kHz offset	-111	-	-111	-	-123	-	dBc/Hz
	100kHz offset	-114	-	-114	-	-125	-	dBc/Hz
	1MHz offset	-125	-	-125	-	-135	-	dBc/Hz
	20MHz offset	-147	-	-147	-	-155	-	dBc/Hz
RMS Phase Jitter (12KHz to 20MHz)	0.8	1.5	0.8	1.5	0.8	1.5	pSec	

## FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm		
	±1.0	±2.0	±2.5
-30 ~ +85	○	○	○
-40 ~ +85	△	○	○

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

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