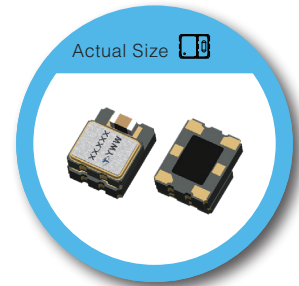


TX-P Type High Frequency up to 1.5 GHz 3.2 x 2.5 mm SMD Temperature Compensate Crystal Oscillator



RoHS Compliant

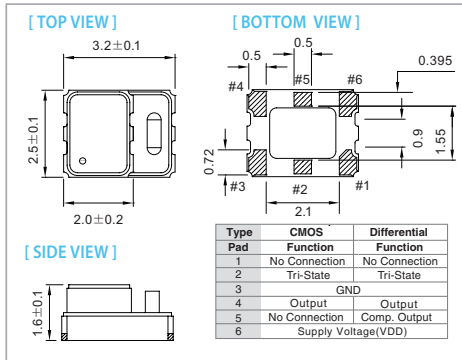
FEATURE

- 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 0.6 pS RMS at 12kHz to 20MHz frequency offsets
- Low current consumption - Pb-free/RoHS compliant
- Frequency Stability $\pm 1.0\text{ppm}$ over -40°C to 85°C

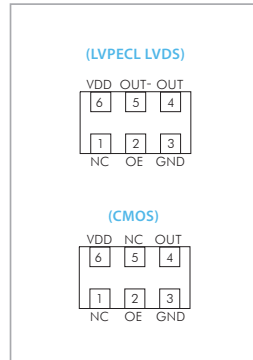
TYPICAL APPLICATION

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

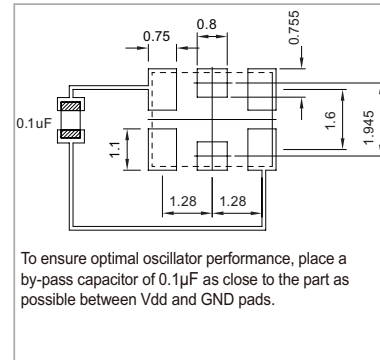
DIMENSION (mm)



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						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
		Duty Cycle	45	55	45	55	45	55
Startup Time	-	5	-	5	-	5	mSec	
Tri-State mode (Input to Pin 2)	Enable	0.7 x VDD	-	0.7 x VDD	-	0.7 x VDD	-	V
	Disable	-	0.3x VDD	-	0.3x VDD	-	0.3x VDD	
Stand by Current	-	20	-	20	-	20	mA	
Output Loading	50 Ω into VDD-2V		100 Ω		-		15pF	
Phase Noise	Typ.	Max.	Typ.	Max.	Typ.	Max.		
	At VDD=3.3V, f _{out} =250MHz	1kHz offset	-107	-	-107	-	-111	-
	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) (fractional mode)	0.8	1.5	0.8	1.5	0.8	1.5	pSec	
RMS Phase Jitter (12KHz to 20MHz) (Integer mode)	0.6	1.2	0.6	1.2	0.6	1.2	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.