



Features and Benefits

- Extended Industrial Operating Temperature Range up to +125°C
- Very low jitter: typical 0.1 ps RMS from 12 KHz – 20 MHz
- Output frequency up to 250 MHz
- Fundamental / 3rd overtone crystal design
- Tri-state enable / disable
- Industry Standard 3.2 x 2.5 x 0.9 hermetically sealed ceramic package

Typical Applications

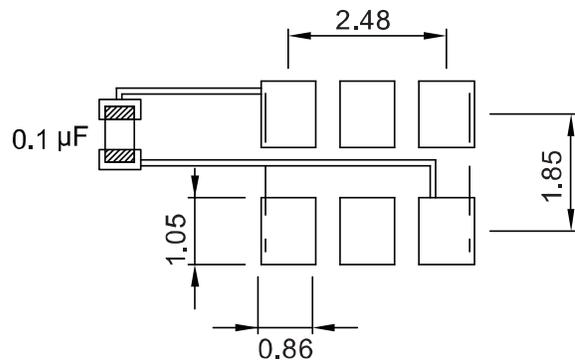
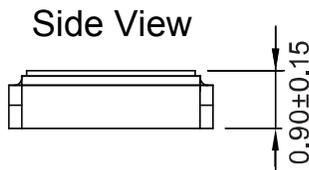
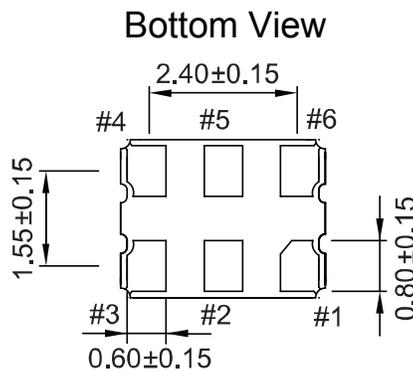
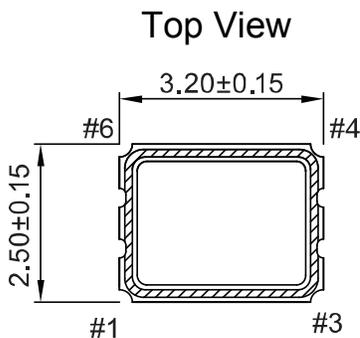
- Enterprise Servers, Reference clocks for ADC and DAC
- 10Gbit Ethernet, Fiber Channel, Storage Area Network, SONET
- Telecom

Description

XO3225SL01-ET offers extraordinary low jitter performance, up to 250MHz high frequency, along with fundamental / 3rd overtone crystal design, under extended operating temperature environment, all within industry standard hermetically sealed ceramic package. This device is suitable for use under extended temperature environment and various telecom and network communication applications.

Mechanical Drawing & Pin Connections

Drawing No: MD160027-'



Pin#	Function
1	Tri-State/NC
2	NC / Tri-State
3	GND
4	Output
5	Comp. Output
6	VDD

To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.

Unit in mm
 1mm = 0.0394 inches



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency Range	F		10		250	MHz	
Standard Frequencies			25.0000, 106.2500, 125.0000, 156.2500, 161.1328, 212.5000				
Output Waveform			LVDS				
Output High (Logic "1")					1.6	V	
Output Low (Logic "0")			0.9				
Rise Time / Fall Time	Tr / Tf	Measured between 20% <->80% of VDD			1.0	nsec	
Start Time					3	msec	
Tri-state (Input to Pin 2 or Pin 1)		Enable (high voltage or floating) Disable (low voltage or GND)	1.75		0.75	V	
RMS Phase Jitter (Integrated 12 KHz ~ 20 MHz)		F _O < 80 MHz			1	psec	
		80 MHz ≤ F _O < 125 MHz			0.5		
		125 MHz ≤ F _O < 170 MHz			0.3		
		170 MHz ≤ F _O < 200 MHz			0.5		
Phase Noise @ 156.25 MHz		100 Hz		-90		dBc / Hz	
		1 KHz		-120			
		10 KHz		-140			
Power Supply							
Supply Voltage	V _{DD}	±10%		2.5		V	
Supply Voltage Variations	V _{DD}	±10%	2.375		2.625	V	
Supply Current		10 MHz ≤ F _O < 160 MHz			50	mA	
		160 MHz ≤ F _O ≤ 250 MHz			50		
Frequency Stability							
Frequency Stability		Inclusive of calibration at +25°C, operating temperature range, input voltage variation, load variation, aging (1 st year), shock and vibration	Refer to ordering options				
Aging		@+25°C 1st year			±3	ppm	
Environmental Conditions							
Operating temperature range	Refer to ordering options						
Storage temperature range	-55°C to +125°C						

Ordering Options: Operating Temperature and Frequency Stability

Operating Temperature (w)		Frequency Stability (z)	
Code	Operating Temperature [°C]	Code	Stability [ppm]
1	-10 ~ +60	1	±25
2	-20 ~ +70	2	±50
3	-40 ~ +85		
4	-40 ~ +125		

Not all combinations of temperature range and stability are available. Please consult DEI for details.



Ordering Options Availability

Frequency Stability [ppm]	Operating Temperature Range [°C]			
	-10 ~ +60	-20 ~ +70	-40 ~ +85	-40 ~ +125
±25	Available	Available	Conditional	Not Available
±50	Available	Available	Available	Available

Not all combinations of temperature range and stability are available. Please consult DEI for details.

Ordering Codes

Model	Frequency in MHz (up to 4 digits)	Operating Temperature	Frequency Stability
XO3225SLD1-ET	xx.yyyy	w	z

Example:XO3225SLD1-ET-125.0000-2-2 has the following specifications

Operating Frequency = 125.0000 MHz
 Operating Temperature = -20°C to +70°C
 Frequency Stability = ±50 ppm