Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA
TEL: 1-281-870-8822 EMAIL:Sales@DynamicEng.com

XO3225SLD2-ET
LVDS SMD Extended Operating Temperature Range Crystal Oscillator

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

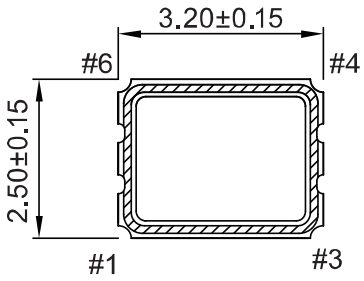
Description

XO3225SLD2-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.

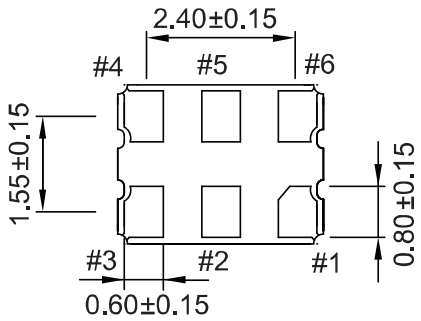
Mechanical Drawing & Pin Connections

Drawing No: MD160027-3

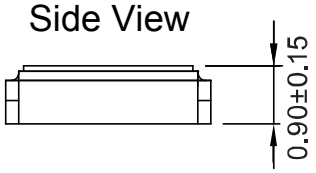
Top View

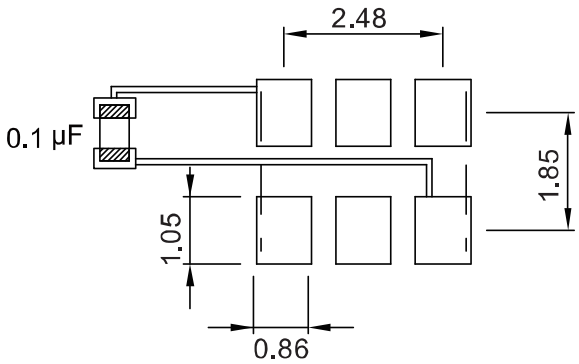


Bottom View



Side View





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.

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

Unit in mm
1mm = 0.0394 inches

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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)	2.31		0.99	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		
		200 MHz ≤ F_O≤ 250 MHz			0.3		
Phase Noise @ 156.25 MHz		100 Hz 1 KHz 10 KHz		-90 -120 -140		dBc / Hz	
Power Supply							
Supply Voltage	V_{DD}	±10%		3.3		V	
Supply Voltage Variations	V_{DD}	±10%	3.135		3.465	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 (1st 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
XO3225SLD2-ET	xx.yyyy	w	z

Example:XO3225SLD2-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