Dynamic Engineers Inc.

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16.384MHz CMOS Crystal Oscillator

Features and Benefits

Frequency range:16.384MHz
Supply voltage:1.2V
Current: 3mA Max.
Frequency stability vs. temperature: ±25PPM
Aging: ±3PPM 1st year
Operating temperature: -40°C to +85°C
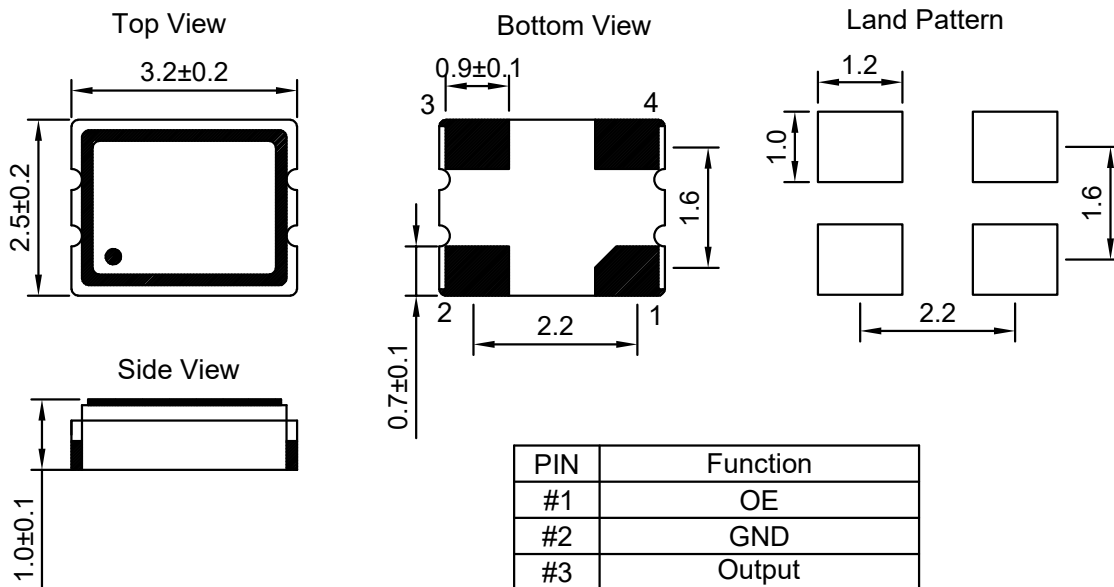Size: 3.2x2.5x1 mm
Package type: SMD

Typical Applications

Wearable device
Sport Video Cams
Ultra-small Notebook PC
Mobile Phones
Digital Circuit

Description

XO3225BL-16.384MHz-A is the ultra-low jitter crystal oscillator. It can be widely used in digital circuits and communication applications.

Mechanical Drawing & Pin Connections

Drawing No: A8 &' $$' $!%

Top View
3.2±0.2
2.5±0.2

Side View
1.0±0.1

Bottom View
0.9±0.1
3   4
1.6
2   1
2.2
0.7±0.1

Land Pattern
1.2
1.0
1.6
2.2

PIN	Function
#1	OE
#2	GND
#3	Output
#4	Supply Voltage

Unit in mm
1mm = 0.0394 inches

GdYWJ4WHjcbg

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	f_0			16.384		MHz	
RF Output							
Output Wave				CMOS			
Output Load					15	pF	
Output Level High			0.96			V	80%Vcc
Output Level Low					0.24	V	20%Vcc
Rise / Fall Time		@20%-80%			6	ns	
Duty Cycle		at 50% waveform	45		55	%	
Startup Time				0.8	5	ms	
OE Control on Pad 1			If 70%Vcc (min.) is applied: Output. Enable Oscillation enable time: 5.0 msec (max.)				
			If 30%Vcc (max.) is applied: Output Disable Oscillation disable time: 100nsec (max.) Current consumption is 10uA max. (OE<=0.3V)				
Power Supply							
Voltage	V_{cc}	±5%		1.2		V	
Current				1.3	3	mA	
Frequency Stability							
Supply Voltage Vs. Frequency Sensitivity					±1.0	ppm	
Vs. Temperature		@-40°C to +85°C			±25	ppm	
Aging		1st year			±3	ppm	
Phase noise		10Hz		-83		dBc/Hz	
		100Hz		-112			
		1KHz		-136			
		10KHz		-140			
		100KHz		-147			
		1MHz		-155			
		20MHz		-156			
RMS Jitter		12KHz-20MHz		0.75		ps	
Environmental Conditions							
Operating temperature range		-40°C to +85°C					
Storage temperature range		-55°C to +150°C					
Temperature Cycling Test		(1) Extreme Cold Temp: -55 ˚C (+0/-10˚C)/ 15±3min; (2) Extreme Hot Temp: +125 ˚C (+15/-0˚C)/ 15±3min; (3) 10 cycles min Result: Frequency and wave form of tested products must remain within specifications.					
Thermal Shock Test		Temperature -55(+0/-10) ˚C to 125(+10/-0) ˚C with Duration of cycle 15 times(min); ExTotal Transfer Time < 10 seconds; Total Dwell time > 2minutes; Specified Temp reached in < 5 minutes; Result: Frequency and wave form of tested products must remain within specifications.					
Low Temperature Test		Temperature -50˚C±5˚C with Duration of test 168hours(min); Result: Frequency and wave form of tested products must remain within specifications.					

Accelerated Life Test(Aging Biased)	Temperature +85˚C±5˚C with Duration of test 168hours±6hours; Result: DC Power supply; Frequency and wave form of tested products must remain within specifications.
Salt Spray Test	Temperature 35˚C with Duration of test 24 hours; NaCl 5％; Result: There Should be no rust on surface of products
Humidity Test	Temperature: 85˚C±5˚C; Relative humidity:85%±5˚C; Duration of test:168 hours(min); Result: Frequency and wave form of tested products must remain within specifications.
Vibration Test	Freq. range: 20~2000Hz Peak to Peak; amplitude:1.52mm Peak acceleration:20G(98m/s2); 3direction(X,Y,Z),each 20min, 4cycles; Result: Frequency and wave form of tested products must remain within specifications.
Drop Test	Method of drop: Free drop; Dropping floor:Hard wood board; Height: 75 cm +1/-0cm; Number of drops: 3 times; Result: Frequency and wave form of tested products must remain within specifications.

Note:
1. DEI requires the copy of this specification returned with approved.
2. Any change to these specification have to be agreed by both parties and new revision of the specification will be issued.