



CXOLHT OSCILLATOR

16 kHz to 50 MHz
High Temperature / Ultra-Low Power
Fast Start-up / High Shock

DESCRIPTION

Miniature, high performance quartz crystal oscillators designed and manufactured for high temperature applications.

FEATURES

- Fast start-up
- Cumulative and high shock resistance (HG version) up to 100,000 g
- High temperature survivability up to 200°C
- Ultra-low power consumption (<20 μ A @ 32.768 kHz)
- Low aging
- IBIS model available
- 3.2 x 1.5 mm hermetically sealed ceramic package
- Designed and manufactured in the USA

APPLICATIONS

High Temperature, Industrial and Avionics

- Downhole Instrumentation
- Underground Boring Tools
- Geothermal
- Measurement While Drilling (MWD)

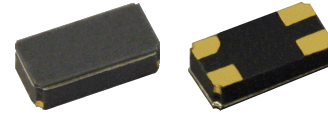
ENABLE/DISABLE OPTIONS (E/N)

Statek offers two enable/disable options: E and N. The E-version has a Tri-State output and stops oscillating internally when the output is put into the high Z state. The N-version does not have PIN 1 connected internally and so has no enable/disable capability. The following table describes the Enable/Disable option E.

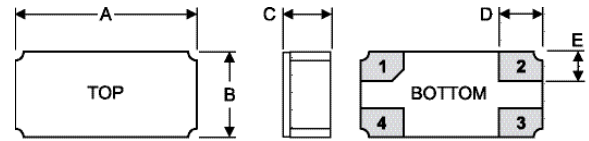
**ENABLE/DISABLE OPTION E
FUNCTION TABLE**

	Enable (Pin 1 High*)	Disable (Pin 1 Low)
Output	Frequency Output	High Z State
Oscillator	Oscillates	Stops

*When PIN 1 is allowed to float, it is held high by an internal pull-up resistor.



PACKAGE DIMENSIONS

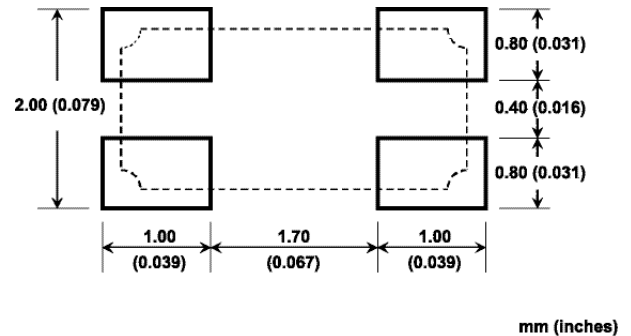


DIM	Termination	TYPICAL		MAXIMUM	
		inches	mm	inches	mm
A		0.126	3.20	0.130	3.30
B		0.059	1.50	0.063	1.60
C	SM1	0.037	0.95	0.039	1.00
	SM2/SM4	0.039	0.99	0.044	1.12
D		0.029	0.75	0.030	0.77
E		0.020	0.50	0.021	0.52

PIN CONNECTIONS

1. Output
2. Ground
3. Output Enable/Disable (E) or no connection (N)
4. V_{DD}

SUGGESTED LAND PATTERN



PACKAGING OPTIONS

- Tray Pack
- Tape and Reel (per EIA 481). See Tape and Reel datasheet 10109.

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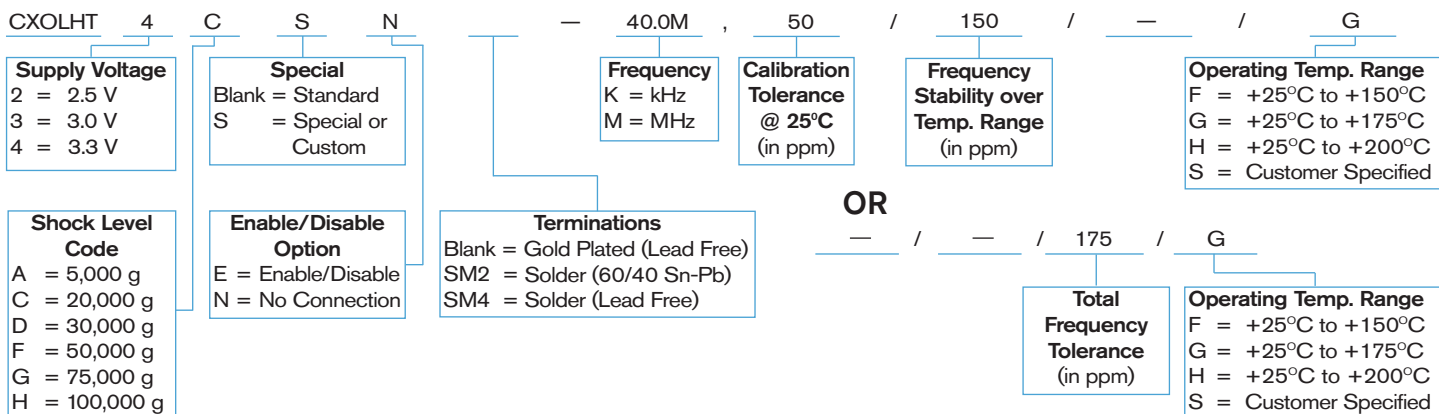
SPECIFICATIONS

Specifications are typical at 25°C unless otherwise noted. Specifications are subject to change without notice. Tighter specifications available.

Frequency	16.384 kHz	32.768 kHz	4 MHz	16 MHz				
Supply Voltage¹	2.5 V to 3.3 V ±10%							
Calibration Tolerance²	±100 ppm to ±20 ppm							
Frequency-Temperature Stability^{3,4}	±150 ppm to ±125 ppm (25°C to 150°C) ±175 ppm to ±150 ppm (25°C to 175°C) ±200 ppm to ±175 ppm (25°C to 200°C)							
Typical Supply Current	<u>2.5 V</u> 15.4 µA	<u>3.3 V</u> 16.0 µA	<u>2.5 V</u> 9.0 µA	<u>3.3 V</u> 8.2 µA	<u>2.5 V</u> 0.7 mA	<u>3.3 V</u> 1.0 mA	<u>2.5 V</u> 1.3 mA	<u>3.3 V</u> 1.9 mA
Typical Static Current (µA)	<u>2.5 V</u> 1.3	<u>3.3 V</u> 1.7	<u>2.5 V</u> 1.3	<u>3.3 V</u> 1.8	<u>2.5 V</u> 0.7	<u>3.3 V</u> 1.0	<u>2.5 V</u> 0.7	<u>3.3 V</u> 1.0
Output Load (CMOS)	15 pF							
Start-up Time, Max (ms)	4.0	8.0	5.0					
Rise/Fall Time, Max (ns)	12.0		5.0					
Duty Cycle	45% MIN 55% MAX							
Aging, First Year, Max	±5 ppm @ 25°C							
Shock Survival	STD: 5,000 g, 0.3 ms, 1/2 sine HG: up to 100,000 g, 0.5 ms, 1/2 sine							
Vibration Survival⁵	20 g, 10-2,000 Hz swept sine							
Operating Temperature Range⁴	-55°C to +200°C							
Storage Temperature Range⁴	-55°C to +125°C							
Max Process Temperature	260°C for 20 seconds							
Max Supply Voltage V_{DD}	-0.3 V to 4.0 V							
Moisture Sensitivity Level (MSL)	This product is hermetically sealed and is not moisture sensitive.							

1. Not all frequencies available at all voltages. Contact factory.
2. Tighter tolerances available.
3. Does not include calibration tolerance. Tighter tolerances available.
4. Broader temperature ranges available. Contact factory.
5. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

HOW TO ORDER CXOLHT OSCILLATORS



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