

CXO3MHG OSCILLATOR

200 kHz to 200 MHz

High Shock, Low-Profile Miniature Surface-Mount 3.3 V Crystal Oscillator

DESCRIPTION

Intended for applications requiring shock survivability to 10,000 g (and higher), Statek's surface-mount CXO3MHG oscillators are high-shock versions of the CXO3M oscillators. These oscillators consist of a Statek miniature quartz crystal and a CMOS/TTL compatible hybrid circuit in a low-profile ceramic package with an extremely small footprint.

FEATURES

- High shock resistance
- 3.3 V operation
- Designed for surface mount applications using infrared, vapor phase, or epoxy mount techniques
- CMOS and TTL compatible
- Low power consumption
- Optional Output Enable/Disable with Tri-State
- Low EMI emission
- Full military testing available

APPLICATIONS

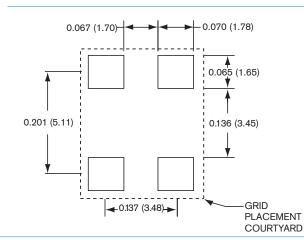
Military & Aerospace

- Smart munitions
- Projectile electronics

Industrial

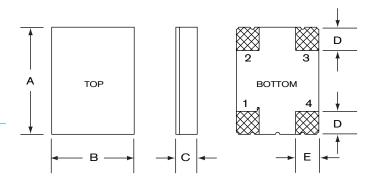
- Engine control
- Down-hole drilling

SUGGESTED LAND PATTERN





DIMENSIONS



	TYF	PICAL	MAX	IMUM
DIM	inches	mm	inches	mm
Α	0.256	6.50	0.263	6.68
В	0.197	5.00	0.204	5.18
C (SM1) C (SM3/SM5)	0.051 0.055	1.30 1.40	0.055 0.063	1.40 1.60
D	0.055	1.40	0.065	1.65
E	0.060	1.52	0.070	1.78

PIN CONNECTIONS

- 1. Enable/Disable (E or T) or not connected (N)
- 2. Ground
- 3. Output
- 4. V_{DD}

10172 Rev. C



SPECIFICATIONS

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

Supply Voltage¹ 3.3 V [±] 10% Calibration Tolerance² [±] 100 ppm

Frequency Stability ± 50 ppm for Commercial Over Temperature³ ± 100 ppm for Industrial

± 100 ppm for Military

Supply Current (Typical) 10 MHz 2 mA

24 MHz 4 mA 30 MHz 6 mA 40 MHz 8 mA 50 MHz 10 mA

Output Load (CMOS)⁴ 15 pF

Start-up Time 5 ms MAX
Rise/Fall Time 6 ns MAX

Duty Cycle 40% MIN, 60% MAX

Aging, first year 10 ppm MAX

Shock, survival⁵ 10,000 g, 0.3 ms, $\frac{1}{2}$ sine Vibration, survival⁶ 20 g, 10-2,000 Hz swept sine

Operating Temp Ranges -10°C to +70°C (Commercial)

-40°C to +85°C (Industrial) -55°C to +125°C (Military)

- Other voltages available. For 5.0 V, see CXOMHG data sheet. For others, contact factory.
- 2. Other tolerances available.
- 3. Does not include calibration tolerance. Other tolerances available.
- 4. Higher CMOS loads and TTL loads available. Contact factory.
- 5. Higher shock version available. Contact factory for requirements above $10,000~{\rm g}$.
- Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

Note: All parameters are measured at ambient temperature with a 10 M Ω , 15 pF load.

PACKAGING OPTIONS

CXO3MHG - Tray Pack

- 16 mm tape, 7" or 13" reels Per EIA 418 (see Tape and Reel data sheet 10109)

ABSOLUTE MAXIMUM RATINGS

Supply Voltage V_{DD} = -0.5 V to 7.0 V Storage Temperature = -55°C to +125°C Maximum Process Temperature 260°C for 20 seconds

*The supply voltage range is -0.5 V to +4.0 V for some products. Contact Factory.

ENABLE/DISABLE OPTIONS (E/T/N)

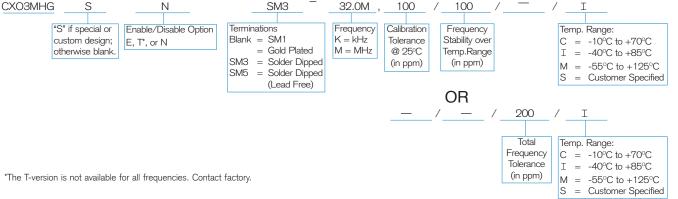
Statek offers three enable/disable options: E, T, and N. Both the E-version and T-version have Tri-State outputs and differ in whether the oscillator continues to run internally when the output is put into the high Z state: it stops in the E-version and continues to run in the T-version. So, the E-version offers very low current consumption when the oscillator is disabled and the T-version offers very fast output recovery when the oscillator is re-enabled. The N-version does not have PIN 1 connected internally and so has no enable/disable capability. The following table summarizes the three options.

COMPARISON OF ENABLE/DISABLE OPTIONS E AND T

	E	Т		
When enabled (PIN 1 is high*)				
Output	Freq. output	Freq. output		
Oscillator	Oscillates	Oscillates		
Current consumption	Normal	Normal		
When disabled (PIN 1 is low)				
Output	High Z state	High Z state		
Oscillator	Stops	Oscillates		
Current consumption	Very low	Lower than normal		
When re-enabled (PIN 1 changes from low to high)				
Output recovery	Delayed	Immediate		
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^{*}When PIN 1 is allowed to float, it is held high by an internal pull-up resistor.

HOW TO ORDER CXO3MHG SURFACE MOUNT CRYSTAL OSCILLATORS



10172 Rev C

