CXOMHG OSCILLATOR

200 kHz to 160 MHz

High Shock, Low Profile, Miniature
Surface Mount Crystal Oscillator

DESCRIPTION

Intended for applications requiring shock survivability to 10,000 g (and higher), Statek' s surface-mount CXOMHG oscillators are high-shock versions of the CXOM 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
- Designed for surface mount applications using infrared, vapor phase, or epoxy mount techniques
- Hermetically sealed ceramic package
- CMOS and TTL compatible
- Low power consumption
- Optional Output Enable/Disable with Tri-State
- Low EMI emission
- Full military testing available

APPLICATIONS

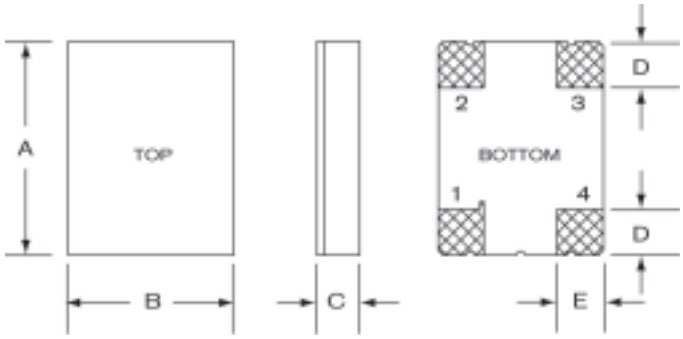
Military & Aerospace

- Smart munitions
- Projectile electronics

Industrial

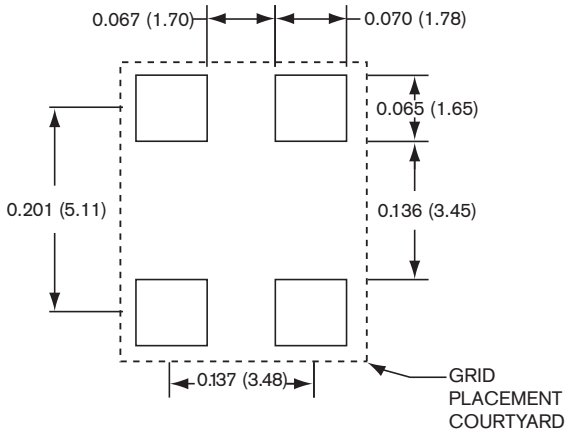
- Engine control
- Down-hole drilling

PACKAGE DIMENSIONS



	TYPICAL		MAXIMUM	
DIM	inches	mm	inches	mm
A	0.256	6.50	0.263	6.68
B	0.197	5.00	0.204	5.18
C (SM1)	0.051	1.30	0.055	1.40
C (SM3/SM5)	0.055	1.40	0.063	1.60
D	0.055	1.40	0.065	1.65
E	0.060	1.52	0.070	1.78

SUGGESTED LAND PATTERN



PIN CONNECTIONS

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

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SPECIFICATIONS

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

Supply Voltage[1]	5.0 V
Calibration Tolerance[2]	± 100 ppm
Frequency Stability Over Temperature[3]	± 50 ppm for Commercial ± 100 ppm for Industrial ± 100 ppm for Military
Supply Current (Typical)	10 MHz 4 mA 24 MHz 8 mA 30 MHz 10 mA 40 MHz 12 mA 50 MHz 14 mA
Output Load (CMOS)	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, survival[5]	10,000 g, 0.3 ms, ½ sine
Vibration, survival[6]	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)

1. Other voltages available. For 3.3 V, see CXO3MHG 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 g.
6. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

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

PACKAGING OPTIONS

CXOMHG - 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}	-0.5V to 7.0V
Storage Temperature	-55°C to +125°C
Maximum Process Temperature	260°C fo 20 seconds

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 compares the E and T versions.

COMPARISON OF ENABLE/DISABLE OPTIONS E AND T

	E	T
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

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

HOW TO ORDER CXOMHG SURFACE MOUNT CRYSTAL OSCILLATORS

CXOM HG S T SM3 — 32.0M, 100 / 100 / — / I

- HG: HG = 10,000 g
- S: "S" if special or custom design. Blank if Std.
- T: Enable/Disable Option E, T*, or N
- SM3: Terminations Blank = SM1; = Gold Plated; SM3 = Solder Dipped; SM5 = Solder Dipped (Lead Free)
- 32.0M,: Frequency K = kHz M = MHz
- 100: Calibration Tolerance @ 25°C (in ppm)
- 100: Frequency Stability over Temp.Range (in ppm)
- I: Temp. Range: C = -10°C to +70°C; I = -40°C to +85°C; M = -55°C to +125°C; S = Customer Specified

OR

— / — / 200 / I

- 200: Total Frequency Tolerance (in ppm)
- I: Temp. Range: C = -10°C to +70°C; I = -40°C to +85°C; M = -55°C to +125°C; S = Customer Specified

*The T-version is not available in all frequencies. Contact factory.

10160 Rev B