



# HGXOHT OSCILLATOR

460 kHz to 50 MHz  
High Shock, High Temperature Crystal Oscillator

## DESCRIPTION

Statek's HGXOHT crystal oscillator is a high temperature, surface-mount oscillator that can survive extremely high shocks – up to 100,000 g. The design consists of a hermetically-sealed high-shock crystal and a CMOS compatible integrated circuit housed in a 5.0 mm x 7.5 mm surface-mount ceramic package.

## FEATURES

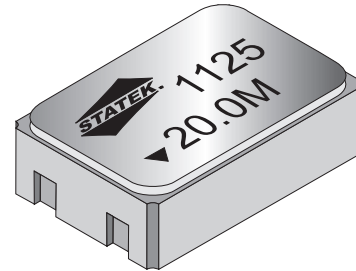
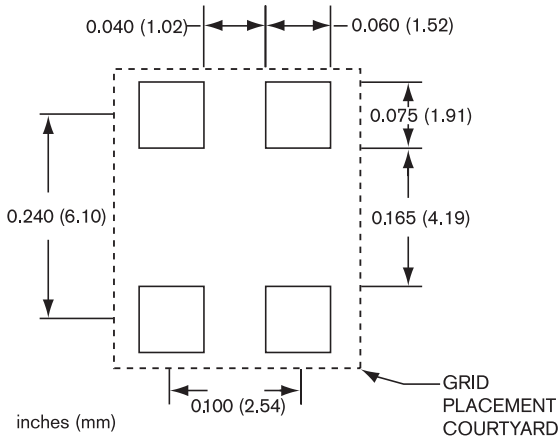
- Mechanical shock survivability up to 100,000 g
- High temperature operation up to 200°C
- Excellent stability over temperature
- Fast start-up
- High shock resistance
- Designed for surface mount applications
- CMOS and TTL compatible
- Optional output Enable/Disable
- Low EMI emission
- Hermetically sealed ceramic package

## APPLICATIONS

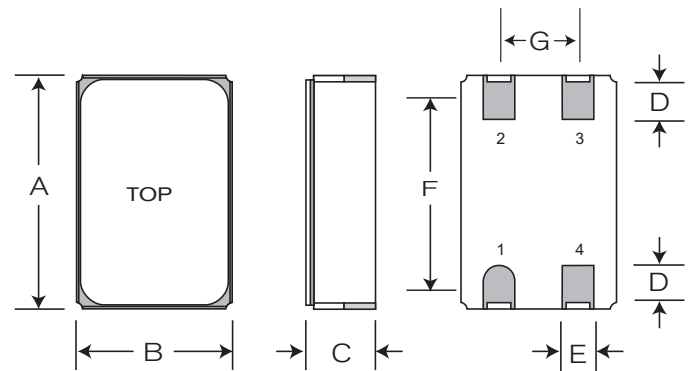
### Industrial

- Downhole instrumentation
- Rotary shaft sensors
- Underground boring tools
- Avionics applications

## SUGGESTED LAND PATTERN



## PACKAGE DIMENSIONS



DIM	TYPICAL		MAXIMUM	
	inches	mm	inches	mm
A	0.295	7.50	0.302	7.68
B	0.197	5.00	0.204	5.18
C*	0.089	2.25	0.098	2.50
D	0.055	1.40	-	-
E	0.040	1.02	-	-
F	0.240	6.10	-	-
G	0.100	2.54	-	-

\*SM1 (Termination material is Au over Ni over W). Solder dip (SM3 and SM5) also available.

## PIN CONNECTIONS

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

## SPECIFICATIONS

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

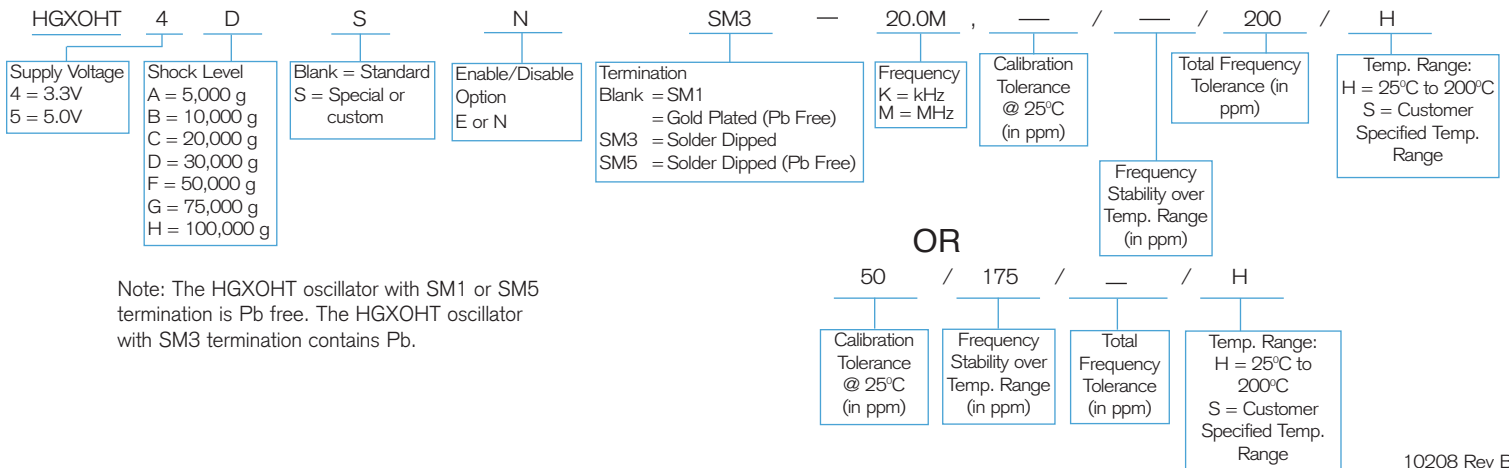
Supply Voltage	3.3 V ±10%
	5.0 V ±10%
Calibration Tolerance	± 50 ppm, or tighter as required
Frequency Stability	± 100 ppm for 25°C to 150°C
Over Temperature <sup>1</sup>	± 150 ppm for 25°C to 175°C
	± 175 ppm for 25°C to 200°C
Total Tolerance <sup>2</sup>	± 200 ppm for 25°C to 200°C
Output Load (CMOS) <sup>3</sup>	15 pF
Start-up Time	5 ms MAX
Rise/Fall Time	10 ns MAX
Duty Cycle	40% MIN, 60% MAX
Shock survival <sup>4</sup>	Up to 100,000 g, 0.5 ms, ½ sine
Vibration, survival <sup>5</sup>	20 g, 10-2000 Hz, swept sine
Operating Temp Range <sup>6</sup>	-55°C up to 200°C

1. Does not include calibration tolerance.
2. Frequency over temperature relative to nominal frequency.
3. Higher CMOS loads available. Contact factory.
4. Shock survival applies at -55°C to +125°C.
5. Per MIL-STD-202G, Method 204D, Condition D, Random vibration testing also available.
6. Expected life at 200°C is in excess of 1,500 hours.

## PACKAGING OPTIONS

HGXOHT - Tray Pack  
 - Tape and Reel  
 - 16 mm tape, 7" or 13" reels  
 Per EIA 481 (see Tape and Reel data sheet # 10109)

## HOW TO ORDER HGXOHT SURFACE MOUNT CRYSTAL OSCILLATORS



## ABSOLUTE MAXIMUM RATINGS

Supply Voltage $V_{DD}$	-0.5 V to 4.0 V (3.3V $V_{DD}$ )
	-0.5 V to 7.0 V (5V $V_{DD}$ )
Storage Temperature	-55°C to +125°C
Maximum Process Temperature	260°C for 20 s

## 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 has no enable/disable capability. The following table describes the Enable/Disable option E.

## COMPARISON OF ENABLE/DISABLE OPTIONS E AND N

	E	N
<i>When enabled (PIN 1 is high*)</i>		
Output	Freq. output	Freq. output
Oscillator	Oscillates	Oscillates
Current consumption	Normal	Normal
<i>When disabled (PIN 1 is low)</i>		
Output	High Z state	N/C
Oscillator	Stops	N/C
Current consumption	Very low	N/C

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

N/C Pin 1 not connected, output frequency.