DESCRIPTION

Statek’s HTO57 crystal oscillator is a 250°C high temperature, rugged surface-mount oscillator. The design consists of a high-shock crystal and a high temperature CMOS integrated circuit housed in a 5.0 mm x 7.0 mm surface-mount ceramic package.

FEATURES

- Manufactured in the U.S.A.
- 3.3 V and 5.0 V operation
- High temperature operation up to 250°C
- Excellent stability over temperature
- Fast start-up
- High shock and vibration resistance
- CMOS output
- Optional output Enable/Disable
- Low EMI emission
- Hermetically sealed ceramic package

APPLICATIONS

Industrial
- Oil & gas downhole instrumentation
- Rotary shaft sensors
- Underground boring tools
- Avionics applications

SUGGESTED LAND PATTERN

Pin Connections

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

Note: A bypass capacitor 0.1 µF needs to be connected as close to the $V_{DD}$ and ground pins as possible.
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% (32.768 kHz, and 1.5 MHz - 30 MHz)
5.0 V ±10% (1.5 MHz - 50 MHz)
Total Tolerance1 ± 500 ppm for 25°C to 250°C
Output Load (CMOS) 15 pF
Start-up Time 5 ms MAX
Rise/Fall Time 10 ns MAX
Duty Cycle2 40% MIN, 60% MAX
Shock survival3 Up to 30,000 g, 0.5 ms, ½ sine
Vibration, survival4 20 g, 10-2000 Hz, swept sine
Operating Temp Range5 -55°C up to 250°C

1. Frequency over temperature relative to nominal frequency.
2. 45% MIN, 55% MAX available. Check with factory.
3. 25°C
5. Expected life at 260°C is a minimum of 1000 hours.

PACKAGING OPTIONS
HTO57 - 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 HTXO SURFACE MOUNT CRYSTAL OSCILLATORS

ABSOLUTE MAXIMUM RATINGS
Supply Voltage $V_{DD}$ -0.5 V to 6.0 V
Storage Temperature -55°C to +125°C

ENABLE/DISABLE OPTIONS (T/N)
Statek offers two enable/disable options: T and N. The T-version has a Tri-State output and oscillates 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 T.

<table>
<thead>
<tr>
<th>COMPARISON OF ENABLE/DISABLE OPTIONS T AND N</th>
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<tbody>
<tr>
<td>T</td>
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<tr>
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<tr>
<td><strong>When enabled (PIN 1 is low)</strong></td>
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<tr>
<td>Output</td>
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<tr>
<td>Oscillator</td>
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<tr>
<td>Current consumption</td>
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<tr>
<td><strong>When disabled (PIN 1 is high)</strong></td>
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<tr>
<td>Output</td>
</tr>
<tr>
<td>Oscillator</td>
</tr>
<tr>
<td>Current consumption</td>
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</tbody>
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