DESCRIPTION
Statek’s HTXO crystal oscillator is a 275°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 7.5 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 275°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

PACKAGING DIMENSIONS

<table>
<thead>
<tr>
<th>DIM</th>
<th>inches</th>
<th>mm</th>
<th>inches</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.295</td>
<td>7.50</td>
<td>0.302</td>
<td>7.68</td>
</tr>
<tr>
<td>B</td>
<td>0.197</td>
<td>5.00</td>
<td>0.204</td>
<td>5.18</td>
</tr>
<tr>
<td>C</td>
<td>0.059</td>
<td>1.50</td>
<td>0.065</td>
<td>1.65</td>
</tr>
<tr>
<td>D</td>
<td>0.055</td>
<td>1.40</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>E</td>
<td>0.040</td>
<td>1.02</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>F</td>
<td>0.240</td>
<td>6.10</td>
<td>-</td>
<td>-</td>
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<tr>
<td>G</td>
<td>0.100</td>
<td>2.54</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*S1 (Termination material is Au over Ni over W).

SUGGESTED LAND PATTERN

PIN CONNECTIONS
1. Enable/Disable (T) or not connected (N)
2. Ground
3. Output
4. VDD

Note: A bypass capacitor 0.1μF needs to be connected as close to the VDD 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 ±5% (1.5 MHz - 30 MHz)
  - 3.3 V ±10% (32.768 kHz, and 1.5 MHz - 30 MHz)
  - 5.0 V ±10% (1.5 MHz - 50 MHz)

- **Total Tolerance**
  - ± 500 ppm for 25°C to 275°C
  - ± 750 ppm for 25°C to 275°C

- **Output Load (CMOS)**
  - 15 pF

- **Start-up Time**
  - 5 ms MAX

- **Rise/Fall Time**
  - 10 ns MAX

- **Duty Cycle**
  - 40% MIN, 60% MAX

- **Shock survival**
  - Up to 30,000 g, 0.5 ms, ½ sine

- **Vibration, survival**
  - 20 g, 10-2000 Hz, swept sine

- **Operating Temp Range**
  - -55°C up to 275°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 250°C is a minimum of 1000 hours.

**PACKAGING OPTIONS**

- HTXO - 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**

- **Supply Voltage**
  - 4 = 3.3V
  - 5 = 5.0V

- **Shock Level**
  - A = 5,000 g
  - B = 10,000 g
  - C = 20,000 g
  - D = 30,000 g

- **Blank = Standard**
  - S = Special or custom

- **Enable/Disable Option**
  - T = Standard
  - N = Special or custom

- **Termination**
  - Blank = SM1
  - SM5 = Solder Dipped (Pb Free)

- **Frequency**
  - X = kHz
  - M = MHz

- **Total Frequency Tolerance (in ppm)**

- **Temp. Range**
  - Q = 25°C to 225°C
  - W = 25°C to 250°C
  - X = 25°C to 275°C
  - S = Customer Specified Temp. Range

**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.

**COMPARISON OF ENABLE/DISABLE OPTIONS T AND N**

<table>
<thead>
<tr>
<th></th>
<th>T</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td><strong>When enabled (PIN 1 is low)</strong></td>
<td></td>
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<tr>
<td>Output</td>
<td>Freq. output</td>
<td>Freq. output</td>
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<tr>
<td>Oscillator</td>
<td>Oscillates</td>
<td>Oscillates</td>
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<tr>
<td>Current consumption</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>When disabled (PIN 1 is high)</strong></td>
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<td></td>
</tr>
<tr>
<td>Output</td>
<td>High Z state</td>
<td>N/C</td>
</tr>
<tr>
<td>Oscillator</td>
<td>Oscillates</td>
<td>N/C</td>
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<tr>
<td>Current consumption</td>
<td>Lower than normal</td>
<td>N/C</td>
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