CXOX OSCILLATOR

1 MHz to 160 MHz

Ultra-Miniature Surface Mount
High Frequency Crystal Oscillator

Actual Size

Top View

Side View

DESCRIPTION

Statek's ultra miniature and ultra low profile CXOX oscillator consists of a CMOS/TTL compatible hybrid circuit and a state-of-the-art, miniature, fundamental-mode crystal.

FEATURES

- Designed for surface mount applications
- CMOS and TTL compatible
- Low power consumption
- Full military testing available
- High shock resistance
- Optional Output Enable/Disable with Tri-State
- Low EMI emission
- Hermetically sealed ceramic package
- Designed and manufactured in the USA

APPLICATIONS

Military & Aerospace

- Long range missiles
- Projectile electronics
- Smart munitions
- Communications
- Navigation
- GPS

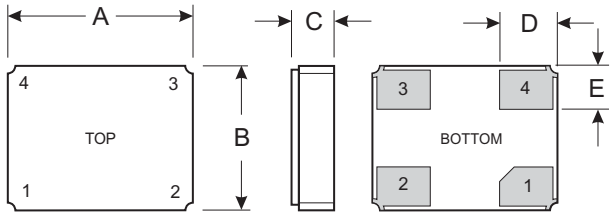
Industrial, Computer & Communications

- Miniature clock oscillator
- Handheld instrumentation
- PDA
- Transponder/Animal migration

Medical

- Test & diagnostic equipment
- Handheld devices

DIMENSIONS

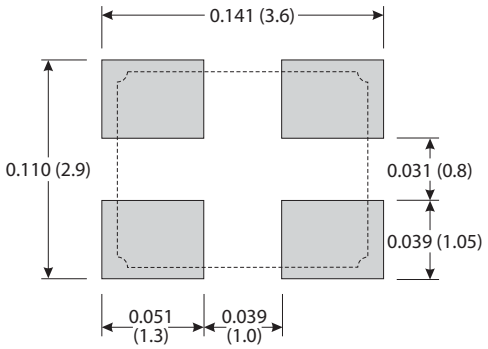


	TYPICAL		MAXIMUM	
DIM	inches	mm	inches	mm
A	0.126	3.20	0.136	3.40
B	0.099	2.50	0.107	2.70
C (SM1)	0.039	1.00	0.043	1.09
C (SM3/SM5)	0.044	1.12	0.048	1.21
D	0.040	1.00	0.041	1.10
E	0.030	0.75	0.031	0.85

PIN CONNECTIONS

1. Output Enable/Disable (E) or no connection (N)
2. Ground
3. Output
4. V_{DD}

SUGGESTED LAND PATTERN



inches (mm)

10168 Rev A

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SPECIFICATIONS

Specifications below are examples. Specifications are subject to change without notice. Tighter specifications available. Please contact factory.

Frequency Range[1]	1 MHz to 160 MHz		
Supply Voltage	1.8 V to 5.0 V ±10%		
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)	1.8 V	3.3 V	5.0 V
24 MHz	1.5 mA	3.0 mA	8.0 mA
32 MHz	2.0 mA	5.0 mA	10.0 mA
50 MHz	3.0 mA	6.0 mA	13.0 mA
130 MHz	12.0 mA	23.0 mA	39.0 mA
Output Load (CMOS)[4]	15 pF		
Start-up Time	5 ms MAX		
Rise/Fall Time	6 ns MAX		
Duty Cycle[5]	40% MIN 60% MAX		
Aging, first year	10 ppm MAX		
Shock, survival[6]	5,000 g, 0.3 ms, 1/2 sine		
Vibration, survival[7]	20 g, 10-2,000 Hz swept sine		
Operating Temp. Range	-10°C to 70°C (Commerical) -40°C to 85°C (Industrial) -55°C to 125°C (Military)		

1. Not all frequencies available at all voltages. Contact factory.
2. Other tolerances available.
3. Does not include calibration tolerances. Other tolerances available.
4. Higher CMOS loads and TTL loads available. Contact factory.
5. 45/55 available upon request in most cases.
6. Higher shock levels available. Contact factory.
7. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

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

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

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

ENABLE/DISABLE OPTION E FUNCTION TABLE

	Enable (Pin 1 High*)	Disable (Pin 1 Low)
Output	Frequency Output	High Z State
Oscillator	Oscillates	Stops
Current	Normal	Very Low

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

PACKAGING OPTIONS

CXOX - Tray Pack

- 12 mm tape, 7" or 13" reels
  Per EIA 481 (see Tape and Reel data sheet 10109)

HOW TO ORDER CXOX SURFACE MOUNT CRYSTAL OSCILLATORS

CXOX 4 S N SM3 – 40.0M , 100 / 100 / — / I

- 4: Supply Voltage
  1 = 1.8 V
  2 = 2.5 V
  3 = 3.0 V
  4 = 3.3 V
  5 = 5.0 V
- S: "S" if special or custom design. Blank if Std.
- N: Enable/Disable Option E or N
- SM3: Terminations
  Blank = SM1
  = Gold Plated (Lead Free)
  SM3 = Solder Dipped
  SM5 = Solder Dipped (Lead Free)
- 40.0M: Frequency K = kHz, M = MHz
- 100: Calibration Tolerance @ 25°C (in ppm)
- 100: Frequency Stability over Temp.Range (in ppm)
- —: Temp. Range:
  C = -10°C to +70°C
  I = -40°C to +85°C
  M = -55°C to +125°C
  S = Customer Specified
- 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)
- —: Temp. Range:
  C = -10°C to +70°C
  I = -40°C to +85°C
  M = -55°C to +125°C
  S = Customer Specified
- I: Temp. Range:
  C = -10°C to +70°C
  I = -40°C to +85°C
  M = -55°C to +125°C
  S = Customer Specified

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