

Low Profile Miniature SMD Crystal Oscillator 300kHz to 170MHz

FEATURES

- Frequency Range 300kHz to 170MHz
- Supply voltage from 0.9V to 5.0Volts available
- Full 'MIL' testing available
- High shock resistance
- Low EMI emission
- Low power consumption
- CMOS/TTL compatible output
- Hermetically sealed ceramic package
- Wire bond pads for hybrids



DESCRIPTION

CXO oscillators consist of a miniature quartz crystal and a CMOS/TTL compatible hybrid circuit in a low-profile, small footprint ceramic package. In addition to the conventional solder or epoxy electrical connection techniques, the CXO oscillator's bond pads on the topside of the unit allow it to be connected electrically in a hybrid assembly using wire bonds. Designed and manufactured in USA by Statek Inc.

SPECIFICATION

Specifications are typical at 25°C unless otherwise indicated. Tighter specifications are available, contact Euroquartz technical sales.

| | |
|---|--|
| Supply Voltage | |
| 300kHz to 120MHz: | +5.0 Volts |
| 300kHz to 170MHz: | +3.3 Volts |
| <i>(Supply voltages 0.9V, 1.8V and 2.5V are also available)</i> | |
| Calibration Tolerance: | ±100ppm |
| Frequency Stability over Operating Temperature Range | |
| Commercial (0° ~ +70°C): | ±50ppm |
| Industrial(-40° ~ +85°C): | ±100ppm |
| Military (-55° ~ +125°C): | ±100ppm |
| Supply Current: | See table below |
| Load: | CMOS 15pF <i>(Higher loads available)</i> |
| Rise and Fall Time: | 6ns maximum |
| Start-up Time: | 5ms maximum |
| Ageing: | 10ppm max., first year. |
| Shock Survival: | 3000g, 0.3ms, ½ sine* |
| Vibration Survival: | 20g, 10~2000Hz swept sine** |
| Maximum Process Temperature: | 260°C for 20 seconds |

* Higher shock version available, see CXOHG.

** Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

PACKAGING OPTIONS

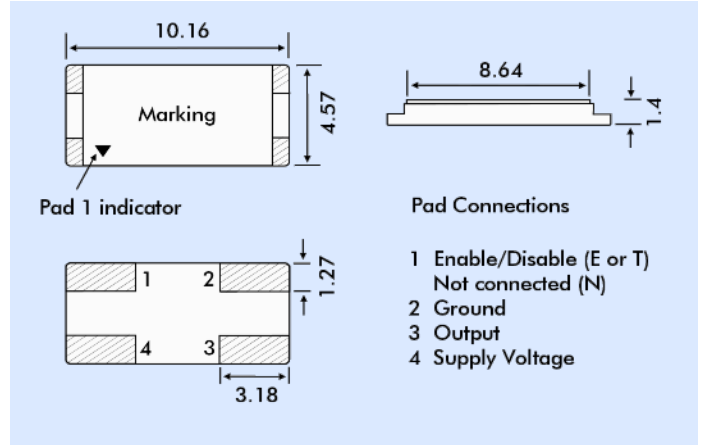
CXO oscillators are available either tray packed (<250pcs) or tape and reel (>250 pieces).
16mm tape, 178mm or 330mm reels (EIA 418).

HOW TO ORDER CXO SMD CRYSTAL OSCILLATORS

Example: **CXO-S-T-SM3-32.0M, 100/100/-/I**

| | | | | | | | | |
|------------|--|----------------------------------|---|---------------------------------|-------------------------------|---|------------|--|
| CXO | - S | - T | - SM3 | - 32.0M, | 100 | / 100 | / - | / I |
| | S' if special, custom design or if the voltage is not 5.0 Volts. Otherwise leave blank | Enable/Disable option, E, T or N | Terminations Blank = SM1 = Gold plated SM3 = Solder dipped SM5 = Solder dipped Lead Free | Frequency K = kHz M = MHz | Calibration Tolerance at 25°C | Frequency Stability over Temp. Range (in ppm) | | Temp. Range C = -10° ~ +70°C I = -40° ~ +85°C M = -55° ~ +125°C S = Customer specified |

OUTLINE & DIMENSIONS



CURRENT CONSUMPTION

| Frequency | Supply Current Vdd = 3.3V | Supply Current Vdd = 5.0V |
|-----------|---------------------------|---------------------------|
| 10MHz | 2mA | 4mA |
| 24MHz | 4mA | 8mA |
| 30MHz | 6mA | 10mA |
| 40MHz | 8mA | 12mA |
| 50MHz | 10mA | 12mA |

COMPARISON OF ENABLE/DISABLE OPTIONS

| | Option 'E' | Option 'I' |
|--|--------------------------------|--------------------------------|
| When enabled (PIN 1 is high*) | | |
| Output Oscillator | Freq. Output Oscillates Normal | Freq. Output Oscillates Normal |
| Current Consumption: | Normal | Normal |
| When disabled (PIN 1 'low') | | |
| Output Oscillator | High 'Z' state Stops | High 'Z' state Oscillates |
| Current Consumption: | Very low | Lower than normal |
| When re-enabled (PIN 1 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.

Option 'N' = Pin 1 not connected internally.