



32.768 kHz CXO3M OSCILLATOR

High Stability/Fast Start-up Crystal Oscillator

DESCRIPTION

For those applications requiring a 32.768 kHz oscillator with high frequency stability over temperature or fast start-up, Statek offers the AT-crystal based 32.768 kHz CXO3M oscillator. A frequency stability of ± 20 ppm over -40°C to $+85^{\circ}\text{C}$ is possible, compared to hundreds of parts-per-million for tuning-fork based 32.768 kHz oscillators. Whereas tuning-fork based oscillators start in hundreds of milliseconds, Statek's 32.768 kHz CXO3M oscillators start in 0.8 ms (typically).

FEATURES

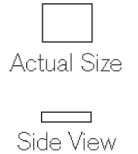
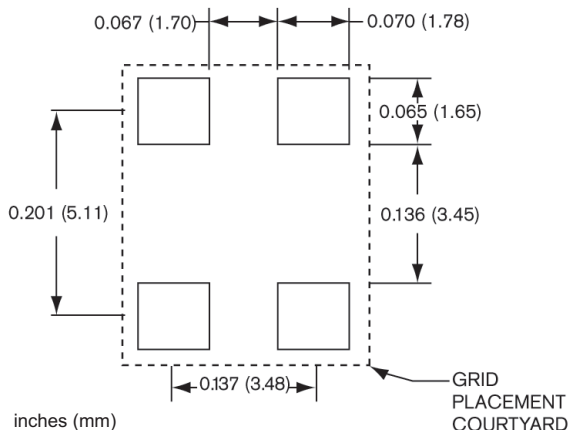
- High frequency stability over temperature
- Fast start-up
- High shock resistance
- Surface mount
- CMOS and TTL compatible
- Optional Output Enable/Disable with Tri-State
- Low EMI emission
- Hermetically sealed ceramic package
- Full military testing available

APPLICATIONS

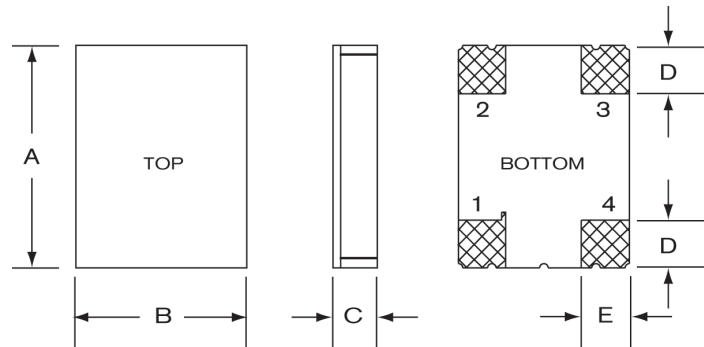
Military / Avionics

- Aircraft landing gear
- Avionics
- Smart Munitions

SUGGESTED LAND PATTERN



DIMENSIONS



DIM	TYPICAL		MAXIMUM	
	inches	mm	inches	mm
A	0.256	6.50	0.263	6.68
B	0.197	5.00	0.204	5.18
C (SM1)	0.051	1.30	0.055	1.40
C (SM3/SM5)	0.055	1.40	0.063	1.60
D	0.055	1.40	0.065	1.65
E	0.060	1.52	0.070	1.78

PIN CONNECTIONS

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

SPECIFICATIONS

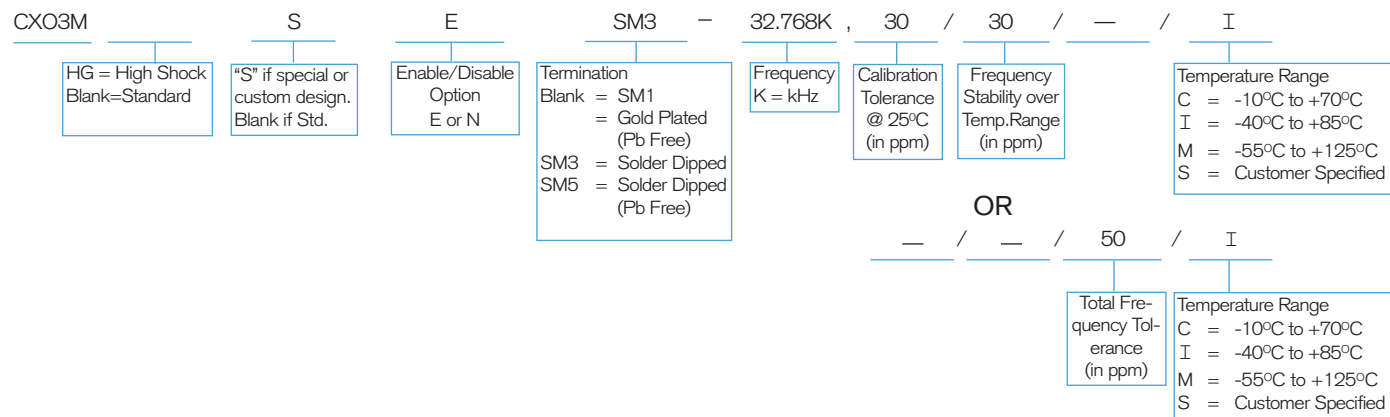
Specifications are typical at 25°C unless otherwise noted. Specifications are subject to change without notice. Tighter specifications available (contact factory).

Supply Voltage ¹	3.3 V ±10%
Calibration Tolerance ²	±100 ppm
Frequency Stability Over Temperature ³	±10 to ±50 ppm for Commercial ±20 to ±100 ppm for Industrial ±30 to ±100 ppm for Military
Output Load (CMOS)	15 pF
Aging, first year	10 ppm MAX
Shock	Std: 3,000 g, 0.3 ms, ½ sine HG: 10,000 g, 0.3 ms, ½ sine
Vibration ⁴	20 g, 10-2,000 Hz swept sine
Operating Temp. Range	-10°C to 70°C (Commercial) -40°C to 85°C (Industrial) -55°C to 125°C (Military)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
V _{OH}	Output Voltage High	0.9V _{DD}			V
V _{OL}	Output Voltage Low			0.1V _{DD}	V
t _{startup}	Start-up Time		0.8		ms
t _r	Rise Time (10%-90%)		85	1000	ns
t _f	Fall Time (10%-90%)		45	1000	ns
	Duty Cycle	45	50	55	%
I _{DD}	Supply Current		500		µA

- Other supply voltages available. Contact factory for ordering information.
 - Other tolerances available.
 - Does not include calibration tolerance. Other tolerances available.
 - 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.

HOW TO ORDER 3.3 V 32.768 kHz CXO3M OSCILLATORS



ABSOLUTE MAXIMUM RATINGS

Supply Voltage V _{DD}	-0.3 V to 5.0 V
Storage Temperature	-55°C to 125°C
Maximum Process Temperature	260°C for 20 sec.

ENABLE/DISABLE OPTIONS (E/N)

For the 32.768 kHz CXO3M, 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 summarizes the Enable/Disable option E.

ENABLE/DISABLE OPTION E SUMMARY

	Enable (Pin 1 High*)	Disable (Pin 1 Low)
Output	Frequency Output	High Z State
Oscillator	Oscillates	Stops
Current	500 µA	3.2 µA

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

PACKAGING OPTIONS

CXO3M - Tray Pack
- 16 mm tape, 7" or 13" reels
Per EIA 481 (see Tape and Reel datasheet #10109)