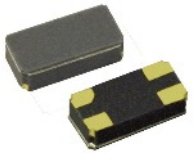
EUROQUARTZ — CXOLHG OSCILLATORS

Ultra-Low Power/Fast Start-Up/High Shock — 32.768kHz



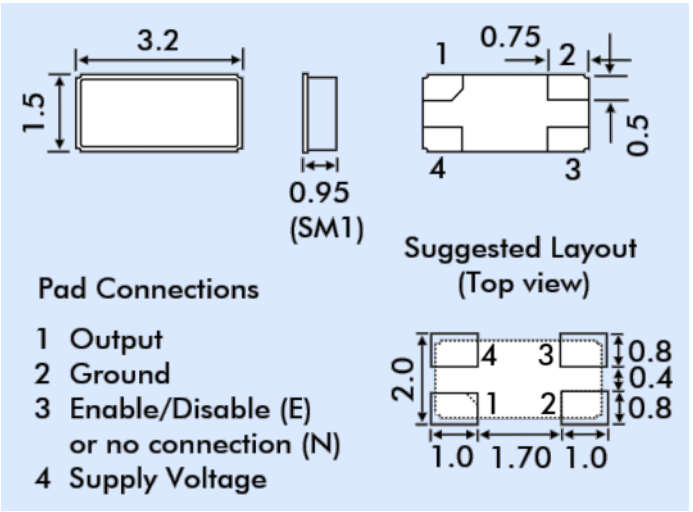
FEATURES

- **Ultra-low power (typically 1μA with Vdd = 3.3V)**
- **Fast start-up (typically 3ms)**
- **Tight frequency tolerance**
- **High Shock Resistance (30000g and higher)**
- **Low acceleration sensitivity (typically 0.5ppb/g**
- **Full military testing available**

DESCRIPTION

The CXOLHG 32.768kHz oscillator achieves low power consumption comparable witht a tuning fork design and the fast start up and tight stability obtainable with AT-cut crystal designs. The oscillator is capable of withstanding significantly higher shock than a standard tuning fork design. Designed and manufactured in USA by Statek Inc.

OUTLINE & DIMENSIONS



SPECIFICATION

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

Frequency:	32.7680kHz
Supply Voltage:	1.8V to +3.3 Volts ±10%
Calibration Tolerance:	±25ppm
Frequency Stability over Operating Temperature Range	
Commercial (0° ~ +70°C):	±10ppm to ±50ppm
Industrial(-40° ~ +85°C):	±20ppm to ±50ppm
Military (-55° ~ +125°C):	±35ppm to ±50ppm
Output Load (CMOS):	15pF
Ageing:	±3ppm first year
Shock, Options	
D:	30000g, 0.3ms, ½ sine
F:	50000g, 0.3ms, ½ sine
G:	75000g, 0.3ms, ½ sine
H:	100000g, 0.3ms, ½ sine
Vibration Survival:	20g, 10~2000Hz swept sine
Operating Temperature Range:	-10° to +60°C (Commercial) -40° to +85°C (Industrial) -55° to +125°C (Military)
Moisture Sensitivity Level (MSL):	The part is hermetically sealed and not moisture sensitive.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage:	-0.5V to 5.0V
Storage Temperature:	-55° to +125°C
Maximum Process Temperature:	260°C for 20 seconds

Symbol	Parameter	Min.	Typ.	Max.	Unit
	Output Voltage High	0.9Vdd			V
V_{OL}	Output Voltage Low			0.1Vdd	V
	Start-up Time:		3		ms
t_r	Rise Time (10%~90%)		7.0	10	ns
	Fall Time (10%~90%)		5.0	10	ns
	Duty Cycle	45	10	55	%
	Input Current		10		μA

ENABLE/DISABLE OPTIONS

There are two Enable/Disable options available, 'E' and 'N'. The 'E' option stops oscillating when the output is put into the High Z state. the 'N' version does not have Pad 1 connected internally. The table below describes the 'E' Enable/Disable option.

	Enable (Pad 3 High)	Disable (Pad 3 Low)
Output	Frequency Output	High Z state
Oscillator	Oscillates	Stops
Current	10μA	<1μA at 25°C

When Pad 3 is allowed to float it is held high by an internal pull-up resistor.

PACKAGING OPTIONS

CXOHLG oscillators are available either tray packed (<250pcs) or tape and reel (>250 pieces).
12mm tape, 178mm or 330mm reels (EIA 418).

HOW TO ORDER CXOLHG SURFACE-MOUNT CRYSTAL OSCILLATORS

CXOLHG 4 F S N - 32.768k, 50 / 50 / – / I

- **4** — Supply V. 1 = 1.8V, 2 = 2.5V, 3 = 3.0V, 4 = 3.3V
- **F** — Shock Level D = 30000g, F = 50000g, G = 75000g, H = 100000g
- **S** — Blank = standard, S = special or custom
- **N** — Enable/Disable option, E or N
- **-** — Terminations: Blank = Gold termination (Lead free); SM3 = Solder termination (60/40 Sn-Pb); SM5 = Solder dipped (Lead free)
- **32.768k,** — Frequency (k = kHz)
- **50** — Calibration Tolerance at 25°C (in ±ppm)
- **/ 50** — Frequency Stability over Temp. Range (in ppm)
- **/ – /** — Temp. Range: C = -10° ~ +70°C, I = -40° ~ +85°C, M = -55° ~ +125°C, S = Customer specified
- **I**

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