

ISSUE 1; May 2016

### Description

- For high temperature, high stability and fast start-up applications IQD offers the AT-cut crystal-based 32.768kHz CXOMKHTS 5 volt Statek oscillator. This oscillator is designed to operate at temperatures up to 200°C. A high shock version is also offered that features 10000G shock survivability. Other features include fast start-up time (0.8ms typical) and low current operation (500µA at 25°C).
- SM1 SM1 (Gold Plated, RoHS compliant)
- SM5 SM5 (Solder Dipped, RoHS compliant)
- Please note that all data is only valid at 25°C unless otherwise stated.

### Frequency Parameters

- Frequency 32.768kHz
- Frequency Tolerance ±100.00ppm
- Tolerance Condition @ 25°C
- Frequency Stability ±100.00ppm to ±175.00ppm
- Ageing ±10ppm max in 1st year @ 25°C
- Ageing (1000hrs): ±100pm max @ 200°C

### Electrical Parameters

- Supply Voltage 5.0V ±10%
- Supply Current: 500µA typ
- Supply Voltage (absolute maximum rating): -0.3V to 5.5V
- Operable Temperature Range: -55 to 200°C
- Expected Life @ 200°C: 1500hrs min

### Operating Temperature Ranges

- 25 to 150°C
- 25 to 175°C
- 25 to 200°C

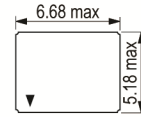
### Output Details

- Output Compatability CMOS
- Drive Capability 15pF
- Start Up Tme: 0.8ms typ
- Rise Time: 85ns typ
- Fall Time: 45ns typ

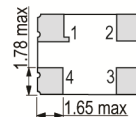
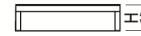
### Output Control

- Enable/Disable (EN):  
Logic 1 to pad 1, output enabled  
Logic 0 to pad 1, output disabled, output goes to high impedance state, current consumption very low, internal oscillator stops  
When pad 1 is allowed to float, it is held by an internal pull-up resistor
- No Connection (NC): Pad 1 No Connection

Outline (mm) -SM1 = SM1 (Gold Plated, RoHS compliant)

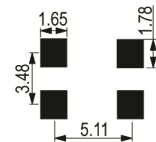


Pad Connections	Height (H) =
1. EN/NC	SM1 1.52 max
2. GND	SM3 1.65 max
3. Output	SM5 1.65 max
4. +Vs	



Underside View

Solder Pad Layout



### Sales Office Contact Details:

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### Environmental Parameters

- Shock: 3000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Test Condition D: 20G, 10Hz-2000Hz, swept sinewave  
(Random vibration testing is available, please contact an IQD Sales Office for further details)
- Storage Temperature Range: -55 to 125°C

### Manufacturing Details

- Features:
  - High temperature operation up to 200°C
  - Overall five times improvement in total frequency stability when compared to a typical tuning fork design
  - A high shock version that features 10000G shock survivability is also available (please contact an IQD Sales Office for further details)
  - Excellent stability over temperature
  - Fast start-up
  - CMOS and TTL compatible
  - Optional output enable/disable
  - Low current
  - Hermetically sealed ceramic package
  - Full military testing available
- Applications:
  - Industrial -
    - Downhole instrumentation
    - Rotary shaft sensors
    - Underground boring tools
- Maximum Process Temperature: 260°C for no longer than 20sec

### Ordering Information

- Frequency
  - Model\*
  - Termination Variant\*
  - Output
  - Frequency Tolerance (@ 25°C)\*
  - Frequency Stability (over operating temperature range\*)
  - Operating Temperature Range\*
  - Supply Voltage
  - Pad 1 function\*
  - (\*minimum required)
- Termination Variants:
  - Gold Plated - SM1
  - Solder Dipped - SM5
  - (Note: Non-RoHS compliant terminations are available, please contact an IQD Sales Office for further details)
- Example:
  - 32.768kHz CXOMKHTS SM1
  - CMOS ±100ppm ±175ppm 25 to 200C 5V EN

### Compliance

- RoHS Status (2011/65/EU)      Optional
- REACH Status                      Compliant
- MSL Rating (JDEC-STD-033):    Not Applicable

### Packaging Details

- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000
- Pack Style: Tray      Supplied on a tray  
Pack Size: 1

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Electrical Specification - maximum limiting values 5.00V  $\pm$ 10%

Frequency	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
32.768000kHz	25 to 200	$\pm$ 100.00	-	-	40/60%

*This document was correct at the time of printing; please contact your local sales office for the latest version.*

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