



## CXOMKHT

### CXOMKHT

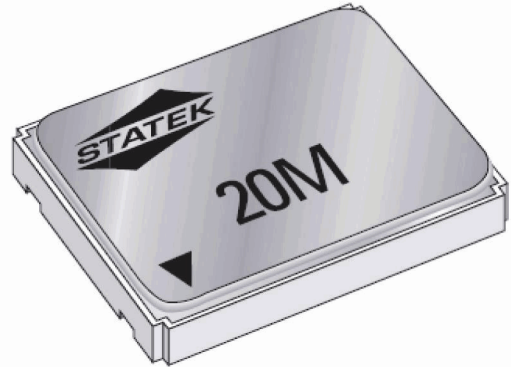
An increasing number of applications require the use of high temperature oscillators. For these applications, IQD offers Statek's CXOMKHT oscillator. This oscillator is designed to operate at temperatures up to 200°C with high shock survivability.

Model Name	Description
CXOMKHT 1.8V	A 1.8V Version
CXOMKHT 3.3V	A 3.3V Version
CXOMKHT 5.0V	A 5.0V Version

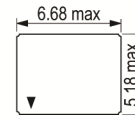
ISSUE 1; June 2019

### Description

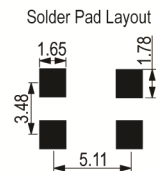
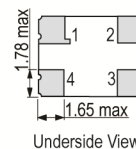
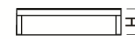
- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. An increasing number of applications require the use of high temperature oscillators. For these applications, IQD offers Statek's CXOMKHT oscillator. This oscillator is designed to operate at temperatures up to 200°C with high shock survivability.
- -HG-SM1 High Shock SM1 (Gold plated, RoHS compliant)
- -HG-SM5 High Shock SM5 (Solder dipped, RoHS compliant)
- -SM1 SM1 (Gold plated, RoHS compliant)
- -SM5 SM5 (Solder dipped, RoHS compliant)
- FEATURES:
  - High temperature operation up to 200°C
  - Excellent stability over temperature
  - Fast start-up
  - High shock resistance
  - CMOS and TTL compatible
  - Optional output enable/disable
  - Low EMI emission
  - Hermetically sealed ceramic package
- APPLICATIONS:
  - Industrial -
  - Downhole instrumentation
  - Rotary shaft sensors
  - Underground boring tools
- Please note that all data is only valid at 25°C unless otherwise stated.



**Outline (mm) -SM5 = SM5 (Solder dipped, 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. +V <sub>S</sub>	



### Frequency Parameters

- Frequency: 200.0kHz to 70.0MHz
- Frequency Tolerance: ±50.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±100.00ppm to ±200.00ppm
- Ageing: ±5ppm max in 1st year @ 25°C
- Ageing: ±100ppm max @ 200°C
- Operable Temperature Range: -55 to 200°C (Expected life at 200°C is in excess of 1500 hours)

### Electrical Parameters

- Supply Voltage: 1.8V ±10%
- Current Draw (typ):
  - 24MHz - 3mA
  - 32MHz - 5mA
  - 65MHz - 8mA
- Absolute Maximum Supply Voltage: -0.5V to 7.0V

### Operating Temperature Ranges

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

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF

ISSUE 1; June 2019

### 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, internal oscillator stops, therefore current consumption is very low but output recovery is delayed.
- No Connection (NC): Pad 1 No Connection
- Tri State (TS):  
Logic 1 to pad 1, output enabled  
Logic 0 to pad 1, output disabled, output goes to high impedance state, internal oscillator continues to function, therefore current consumption is lower than normal but output recovery is immediate.
- Start Up Time: 5ms max

### Environmental Parameters

- Shock:  
Standard version: 3000G, 0.3ms, 1/2 sine  
High Shock version (HG): 10000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G, 10-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

### Manufacturing Details

- Maximum Process Temperature: 260°C (20secs max)

### Ordering Information

- Frequency\*  
Model\*  
Shock Option\*  
Termination Variant\*  
Output  
Frequency Tolerance (@ 25°C)\*  
Frequency Stability (over operating temperature range)\*  
Operating Temperature Range\*  
Supply Voltage  
Pad 1 Function\*  
(\*minimum required)
- Shock Options:  
Blank = Standard Shock  
-HG = High Shock
- Termination Variants:  
SM1 = Gold Plated  
SM5 = Solder Dipped  
Note: non-RoHS compliant terminations are available - please contact an IQD Sales Office
- Pad 1 Function Options:  
EN = Enable/Disable  
NC = No Connection  
TS = Tri State
- Example:  
10.0MHz CXOMKHT 1.8V SM1  
CMOS ±50ppm ±175ppm 25 to 200C 1.8V TS

### Compliance

- RoHS Status (2015/863/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



# Crystal Clock Oscillator Specification CXOMKHT 1.8V

ISSUE 1; June 2019

Electrical Specification - maximum limiting values 1.8V  $\pm$ 10%

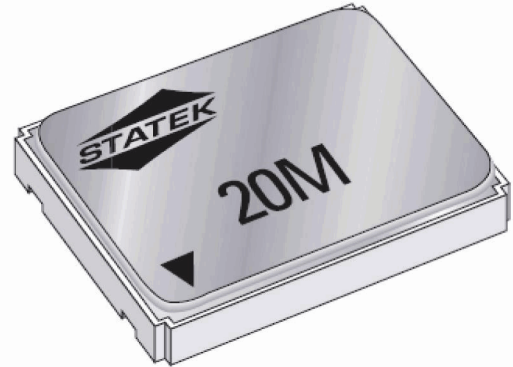
Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
200.0kHz	70.0MHz	25 to 150	$\pm$ 100.0	-	10	40/60%
		25 to 175	$\pm$ 150.0	-	10	40/60%
		25 to 200	$\pm$ 175.0	-	10	40/60%

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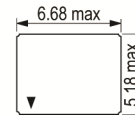
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### Description

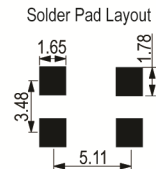
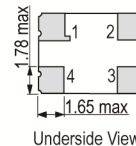
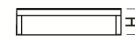
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- -HG-SM1 High Shock SM1 (Gold plated, RoHS compliant)
- -HG-SM5 High Shock SM5 (Solder dipped, RoHS compliant)
- -SM1 SM1 (Gold plated, RoHS compliant)
- -SM5 SM5 (Solder dipped, RoHS compliant)
- FEATURES:
  - High temperature operation up to 200°C
  - Excellent stability over temperature
  - Fast start-up
  - High shock resistance
  - CMOS and TTL compatible
  - Optional output enable/disable
  - Low EMI emission
  - Hermetically sealed ceramic package
- APPLICATIONS:
  - Industrial -
  - Downhole instrumentation
  - Rotary shaft sensors
  - Underground boring tools
- Please note that all data is only valid at 25°C unless otherwise stated.



**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. +V <sub>S</sub>	



### Frequency Parameters

- Frequency: 200.0kHz to 70.0MHz
- Frequency Tolerance: ±50.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±100.00ppm to ±200.00ppm
- Ageing: ±5ppm max in 1st year @ 25°C
- Ageing: ±100ppm max @ 200°C
- Operable Temperature Range: -55 to 200°C (Expected life at 200°C is in excess of 1500 hours)

### Electrical Parameters

- Supply Voltage: 3.3V ±10%
- Supply Current (typ):
  - 24MHz - 3mA
  - 32MHz - 5mA
  - 65MHz - 8mA
- Absolute Maximum Supply Voltage: -0.5V to 7.0V

### Operating Temperature Ranges

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

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF

**ISSUE 1; June 2019**

**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, internal oscillator stops, therefore current consumption is very low but output recovery is delayed.
- No Connection (NC): Pad 1 No Connection
- Tri State (TS):  
Logic 1 to pad 1, output enabled  
Logic 0 to pad 1, output disabled, output goes to high impedance state, internal oscillator continues to function, therefore current consumption is lower than normal but output recovery is immediate.
- Start Up Time: 5ms max

**Environmental Parameters**

- Shock:  
Standard version: 3000G, 0.3ms, 1/2 sine  
High Shock version (HG): 10000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G, 10-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

**Manufacturing Details**

- Maximum Process Temperature: 260°C (20secs max)

**Ordering Information**

- Frequency\*  
Model\*  
Shock Option\*  
Termination Variant\*  
Output  
Frequency Tolerance (@ 25°C)\*  
Frequency Stability (over operating temperature range)\*  
Operating Temperature Range\*  
Supply Voltage  
Pad 1 Function\*  
(\*minimum required)
- Shock Options:  
Blank = Standard Shock  
-HG = High Shock
- Termination Variants:  
SM1 = Gold Plated  
SM5 = Solder Dipped  
Note: non-RoHS compliant terminations are available - please contact an IQD Sales Office
- Pad 1 Function Options:  
EN = Enable/Disable  
NC = No Connection  
TS = Tri State
- Example:  
10.0MHz CXOMKHT 3.3V SM1  
CMOS ±50ppm ±175ppm 25 to 200C 3.3V TS

**Compliance**

- RoHS Status (2015/863/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



# Crystal Clock Oscillator Specification CXOMKHT 3.3V

ISSUE 1; June 2019

Electrical Specification - maximum limiting values 3.3V  $\pm$ 10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
200.0kHz	70.0MHz	25 to 150	$\pm$ 100.0	-	10	40/60%
		25 to 175	$\pm$ 150.0	-	10	40/60%
		25 to 200	$\pm$ 175.0	-	10	40/60%

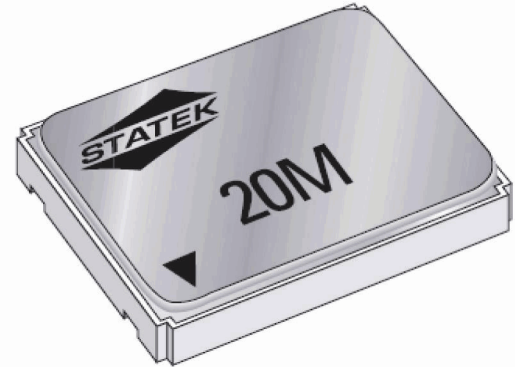
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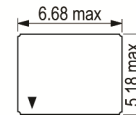
## Description



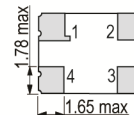
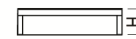
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- -HG-SM1 High Shock SM1 (Gold plated, RoHS compliant)
- -HG-SM5 High Shock SM5 (Solder dipped, RoHS compliant)
- -SM1 SM1 (Gold plated, RoHS compliant)
- -SM5 SM5 (Solder dipped, RoHS compliant)
- FEATURES:
  - High temperature operation up to 200°C
  - Excellent stability over temperature
  - Fast start-up
  - High shock resistance
  - CMOS and TTL compatible
  - Optional output enable/disable
  - Low EMI emission
  - Hermetically sealed ceramic package
- APPLICATIONS:
  - Industrial -
  - Downhole instrumentation
  - Rotary shaft sensors
  - Underground boring tools
- Please note that all data is only valid at 25°C unless otherwise stated.



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

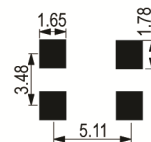


Pad Connections	Height (H) =
1. EN/NC	SM1 1.52 max
2. GND	SM3 1.65 max
3. Output	SM5 1.65 max
4. +V <sub>S</sub>	



Underside View

Solder Pad Layout



## Frequency Parameters

- Frequency: 200.0kHz to 70.0MHz
- Frequency Tolerance: ±50.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±100.00ppm to ±200.00ppm
- Ageing: ±5ppm max in 1st year @ 25°C
- Ageing: ±100ppm max @ 200°C
- Operable Temperature Range: -55 to 200°C (Expected life at 200°C is in excess of 1500 hours)

## Electrical Parameters

- Supply Voltage: 5.0V ±10%
- Supply Current (typ):
  - 24MHz - 8mA
  - 32MHz - 10mA
  - 65MHz - 16mA
- Absolute Maximum Supply Voltage: -0.5V to 7.0V

## Operating Temperature Ranges

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

## Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF



**ISSUE 1; June 2019**

**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, internal oscillator stops, therefore current consumption is very low but output recovery is delayed.
- No Connection (NC): Pad 1 No Connection
- Tri State (TS):  
Logic 1 to pad 1, output enabled  
Logic 0 to pad 1, output disabled, output goes to high impedance state, internal oscillator continues to function, therefore current consumption is lower than normal but output recovery is immediate.
- Start Up Time: 5ms max

**Environmental Parameters**

- Shock:  
Standard version: 3000G, 0.3ms, 1/2 sine  
High Shock version (HG): 10000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G, 10-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

**Manufacturing Details**

- Maximum Process Temperature: 260°C (20secs max)

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Termination Variant\*  
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**Compliance**

- RoHS Status (2015/863/EU)      Optional
- REACH Status                      Compliant
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**Packaging Details**

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Pack Size: 1,000
- Pack Style: Tray      Supplied on a tray  
Pack Size: 1

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Electrical Specification - maximum limiting values 5.0V  $\pm$ 10%

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		°C	ppm	mA	ns	%
200.0kHz	70.0MHz	25 to 150	$\pm$ 100.0	-	10	40/60
		25 to 175	$\pm$ 150.0	-	10	40/60
		25 to 200	$\pm$ 175.0	-	10	40/60

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Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)