



## CXOQ

### CXOQ

Statek's ultra miniature and ultra low profile CXOQ oscillators consist of a CMOS/TTL compatible hybrid circuit and a state-of-the-art, miniature, fundamental-mode crystal.

Model Name	Description
CXOQ 1.8V	1.8V Version
CXOQ 2.5V	2.5V Version
CXOQ 3.0V	3.0V Version
CXOQ 3.3V	3.3V Version

ISSUE 1; June 2019

### Description

- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. Technological advancements permit 2.5 x 2.0mm CXOQ quartz oscillator to have design-in capabilities of withstanding high shock applications. Additionally, the ultra miniature CXOQ takes advantage of Statek's well known reliability and impeccable quality.
- -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: 400.0kHz to 100.0MHz
- Frequency Tolerance:  $\pm 30.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Tolerance Condition: @ 25°C
- Frequency Stability:  $\pm 50.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 5\text{ppm}$  max in 1st year

### Electrical Parameters

- Supply Voltage: 1.8V  $\pm 10\%$
- Supply Current (typical):
  - 1.5mA @ 24MHz
  - 2.0mA @ 32MHz
  - 3.0mA @ 50MHz
- Absolute Maximum Supply Voltage Range: -0.5V to 5.0V

### Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C
- -55 to 125°C

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF

### Output Control

- Start-Up Tme: 5ms max

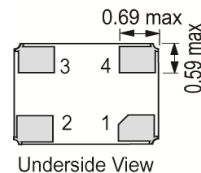
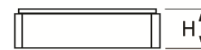
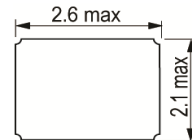
### Environmental Parameters

- Shock: 5000G, 0.3ms, 1/2 sine
- Vibration: 20G, 10-2000Hz, swept sine per MIL-STD-202G, Method 204D, Condition D
- Storage Temperature Range: -55 to 125°C

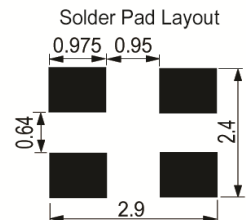
### Manufacturing Details

- Termination Variants:
  - SM1 = Gold Plated (RoHS compliant)
  - SM3 = Solder Dipped (non RoHS compliant)
  - SM5 = Solder Dipped (RoHS compliant)
- Maximum Process Temperature: 260°C for 20 seconds max

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



Pad Connections	Height (H) =
1. EN/NC	SM1 1.0 max
2. GND & Lid	SM3 1.22 max
3. Output	SM5 1.22 max
4. +V <sub>S</sub>	





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#### Ordering Information

- (\*minimum required):
  - Frequency\*
  - Model\*
  - Supply Voltage
  - Termination Variant\*
  - Frequency Tolerance (@25°C)\*
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range
- Example:
  - 10.0MHz CXOQ 1.8V SM1
  - CMOS ±100ppm ±100ppm -40 to 85C NC

#### Compliance

- RoHS Status (2015/863/EU)      Optional
- REACH Status                      Compliant
- MSL Rating (JDEC-STD-033):    Not Applicable

#### Packaging Details

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

#### Electrical Specification - maximum limiting values 1.8V ±10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
400.0kHz	100.0MHz	-10 to 70	±50.0	3	10	45/55%
		-40 to 85	±100.0	3	10	45/55%
		-55 to 125	±100.0	3	10	45/55%

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### Description

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- 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: 400.0kHz to 100.0MHz
- Frequency Tolerance:  $\pm 30.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Frequency Stability:  $\pm 50.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 5\text{ppm}$  max in 1st year

### Electrical Parameters

- Supply Voltage: 2.5V  $\pm 10\%$
- Supply Current (typical):
  - 3mA @ 24MHz
  - 5mA @ 32MHz
  - 6mA @ 50MHz
- Absolute Maximum Supply Voltage Range: -0.5V to 5.0V

### Operating Temperature Ranges

- 10 to 70°C
- 40 to 85°C
- 55 to 125°C

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF

### Output Control

- Start-Up Tme: 5ms max

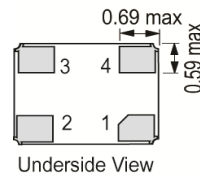
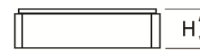
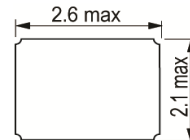
### Environmental Parameters

- APPLICATIONS:
  - Military
  - Medical
  - Industrial
- Shock: 5000G, 0.3ms, 1/2 sine
- Vibration: 20G, 10-2000Hz, swept sine per MIL-STD-202G, Method 204D, Condition D
- Storage Temperature Range: -55 to 125°C

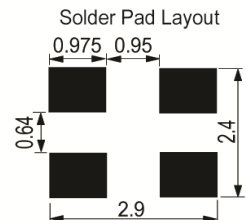
### Manufacturing Details

- Termination Variants:
  - SM1 = Gold Plated (RoHS compliant)
  - SM3 = Solder Dipped (non RoHS compliant)
  - SM5 = Solder Dipped (RoHS compliant)
- Maximum Process Temperature: 260°C for 20 seconds max

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



Pad Connections	Height (H) =
1. EN/NC	SM1 1.0 max
2. GND & Lid	SM3 1.22 max
3. Output	SM5 1.22 max
4. +Vs	





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#### Ordering Information

- (\*minimum required):
  - Frequency\*
  - Model\*
  - Supply Voltage
  - Termination Variant\*
  - Frequency Tolerance (@25°C)\*
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range
- Example:
  - 10.0MHz CXOQ 2.5V SM1
  - CMOS ±100ppm ±100ppm -40 to 85C NC

#### Compliance

- RoHS Status (2015/863/EU)      Optional
- REACH Status                      Compliant
- MSL Rating (JDEC-STD-033):    Not Applicable

#### Packaging Details

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

#### Electrical Specification - maximum limiting values 2.5V ±10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
400.0kHz	100.0MHz	-10 to 70	±50.0	-	10	45/55%
		-40 to 85	±100.0	-	10	45/55%
		-55 to 125	±100.0	-	10	45/55%

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### Description

- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. Technological advancements permit 2.5 x 2.0mm CXOQ quartz oscillator to have design-in capabilities of withstanding high shock applications. Additionally, the ultra miniature CXOQ takes advantage of Statek's well known reliability and impeccable quality.
- 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: 400.0kHz to 100.0MHz
- Frequency Tolerance:  $\pm 30.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Frequency Stability:  $\pm 50.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 5\text{ppm}$  max in 1st year

### Electrical Parameters

- Supply Voltage: 3.0V  $\pm 10\%$
- Supply Current (typical):
  - 3mA @ 24MHz
  - 5mA @ 32MHz
  - 6mA @ 50MHz
- Absolute Maximum Supply Voltage Range: -0.5V to 5.0V

### Operating Temperature Ranges

- 10 to 70°C
- 40 to 85°C
- 55 to 125°C

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF

### Output Control

- Start-Up Tme: 5ms max

### Environmental Parameters

- Shock: 5000G, 0.3ms, 1/2 sine
- Vibration: 20G, 10-2000Hz, swept sine per MIL-STD-202G, Method 204D, Condition D
- Storage Temperature Range: -55 to 125°C

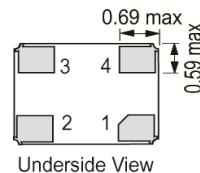
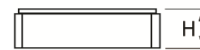
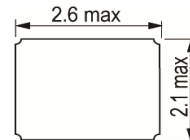
### Manufacturing Details

- Termination Variants:
  - SM1 = Gold Plated (RoHS compliant)
  - SM3 = Solder Dipped (non RoHS compliant)
  - SM5 = Solder Dipped (RoHS compliant)
- Maximum Process Temperature: 260°C for 20 seconds max

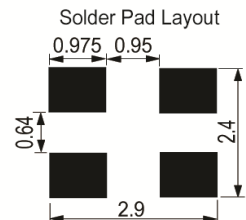
### Ordering Information

- (\*minimum required):
  - Frequency\*
  - Model\*
  - Supply Voltage
  - Termination Variant\*
  - Frequency Tolerance (@25°C)\*
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range
- Example:
  - 10.0MHz CXOQ 3.0V SM1
  - CMOS  $\pm 100\text{ppm}$   $\pm 100\text{ppm}$  -40 to 85C NC

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



Pad Connections	Height (H) =
1. EN/NC	SM1 1.0 max
2. GND & Lid	SM3 1.22 max
3. Output	SM5 1.22 max
4. +Vs	





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

**Electrical Specification - maximum limiting values 3.0V ±10%**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
400.0kHz	100.0MHz	-10 to 70	±50.0	-	10	45/55%
		-40 to 85	±100.0	-	10	45/55%
		-55 to 125	±100.0	-	10	45/55%

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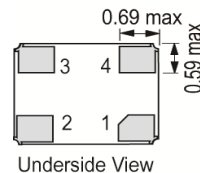
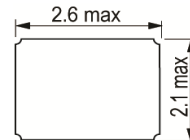
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### Description

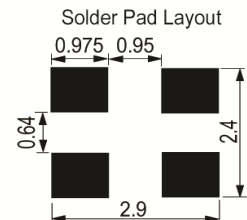
- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. The surface-mount CXOQ is an ultra-miniature quartz crystal oscillator with an optional Enable/Disable function. Hermetically sealed in a highly reliable ceramic housing Statek have designed this oscillator to withstand high shock applications.
- HG-SM1 SM1 Gold Plated (RoHS compliant) high shock
- HG-SM5 SM5 Solder Dipped (RoHS compliant) high shock
- SM1 SM1 Gold Plated (RoHS compliant)
- SM5 SM5 Solder Dipped (RoHS compliant)
- FEATURES:**
  - High shock survival
  - Low acceleration sensitivity (HG version)
  - Low power consumption
  - High frequency stability
  - CMOS and TTL compatible
  - Optional output enable/disable with Tri-State
  - Low EMI emission
  - Hermetically sealed ceramic package
  - Full military testing per MIL PRF 55310 available
- APPLICATIONS:**
  - Military
  - Medical
  - Industrial
- 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 1.0 max
2. GND & Lid	SM3 1.22 max
3. Output	SM5 1.22 max
4. +Vs	



### Frequency Parameters

- Frequency: 400.0kHz to 100.0MHz
- Frequency Tolerance:  $\pm 30.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Tolerance Condition: @ 25°C
- Frequency Stability:  $\pm 50.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 5\text{ppm}$  max in 1st year
- Note: Tighter Frequency Tolerances and Stabilities are available - please contact an IQD Sales Office.

### Electrical Parameters

- Supply Voltage: 3.3V  $\pm 10\%$
- Absolute Maximum Supply Voltage Range: -0.5V to 5.0V
- Supply Current (typical):
  - 3.0mA @ 24MHz
  - 5.0mA @ 32MHz
  - 6.0mA @ 50MHz

### Operating Temperature Ranges

- 10 to 70°C
- 40 to 85°C
- 55 to 125°C

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF
- Start-Up Time: 5ms max
- Note: Tighter Duty Cycles are available - please contact an IQD Sales Office.

### Output Control

- Enable/Disable Function:
  - Logic '1' to pad 1 enables oscillator output.
  - Logic '0' to pad 1 disables oscillator output, output goes to high impedance state, current consumption very low, internal oscillator stops.
  - No connection to pad 1 enables oscillator output.





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**Environmental Parameters**

- Storage Temperature Range: -55 to 125°C
- Shock:
  - Standard: 5000G, 0.3ms, 1/2 sine.
  - High Shock (HG): 20000G, 0.3ms, 1/2 sine.
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G, 10-2000Hz swept sine.
- Note: Random vibration testing is also available - please contact an IQD Sales Office.

**Manufacturing Details**

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

**Ordering Information**

- Frequency\*
  - Model\*
  - Supply Voltage
  - Shock Level\*
  - Termination Variant\*
  - Output
  - Frequency Tolerance (@ 25°C)\*
  - Frequency Stability (over operating temperature range)\*
  - Operating Temperature Range
  - Pad 1 Function\*
- (\*minimum required)
- Shock Level Options:
  - Blank = Standard
  - HG = High Shock
- Termination Variants:
  - SM1 = Gold Plated
  - SM5 = Solder Dipped

Note: non-RoHS compliant terminations are available (SM3 = Solder Dipped) - please contact an IQD Sales Office.
- Pad 1 Function Options:
  - EN = Enable/Disable
  - NC = No Connection
- Example:
  - 10.0MHz CXOQ 3.3V SM1
  - CMOS ±100ppm ±100ppm -40 to 85C NC

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

**Electrical Specification - maximum limiting values 3.3V ±10%**

Frequency Min	Frequency Max	Temperature Range	Stability Min	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
400.0kHz	100.0MHz	-10 to 70	±50.0	-	10	45/55%
		-40 to 85	±100.0	-	10	45/55%
		-55 to 125	±100.0	-	10	45/55%

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**Sales Office Contact Details:**



Courtesy of Statek Corporation

Crystal Clock Oscillator Specification  
**CXOQ 3.3V**

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