



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; October 2018

Description

- 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 $\pm 100.00\text{ppm}$ @ 25°C
- 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

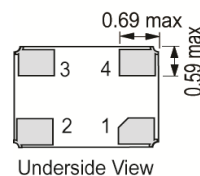
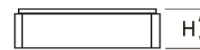
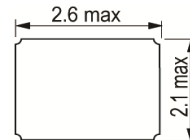
Manufacturing Details

- 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

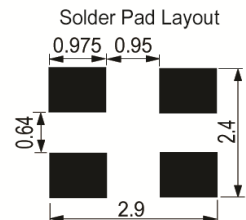
Ordering Information

- (*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 $\pm 100\text{ppm}$ $\pm 100\text{ppm}$ -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 (2011/65/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-D
Pack Size: 1,000

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	%
400.0kHz	100.0MHz	-10 to 70	\pm 50.0	3	10	45/55%
		-40 to 85	\pm 100.0	3	10	45/55%
		-55 to 125	\pm 100.0	3	10	45/55%

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Description

- 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: ±30.00ppm to ±100.00ppm
- Frequency Stability: ±50.00ppm to ±100.00ppm
- Ageing: ±5ppm max in 1st year

Electrical Parameters

- Supply Voltage: 2.5V ±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 Time: 5ms max

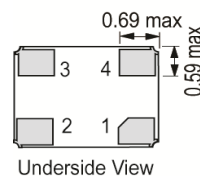
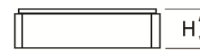
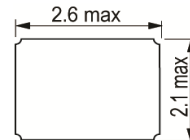
Environmental Parameters

- 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

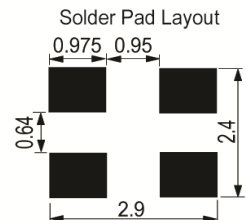
Manufacturing Details

- 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. +V _S	



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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 (2011/65/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-D
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

- 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: ±30.00ppm to ±100.00ppm
- Frequency Stability: ±50.00ppm to ±100.00ppm
- Ageing: ±5ppm max in 1st year

Electrical Parameters

- Supply Voltage: 3.0V ±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 Time: 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

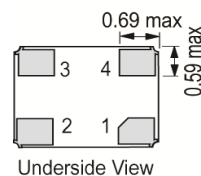
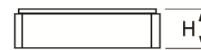
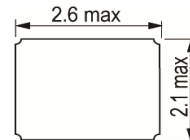
Manufacturing Details

- Termination Variants:
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 - SM5 = Solder Dipped (RoHS compliant)
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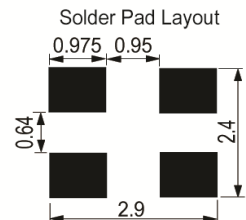
Ordering Information

- (*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 3.0V SM1
 - CMOS ±100ppm ±100ppm -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 (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

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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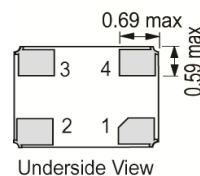
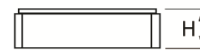
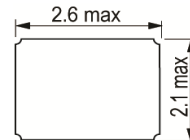
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Description

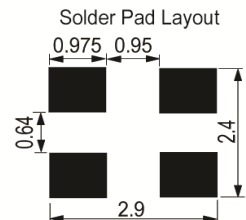
- The surface-mount CXOQ is an ultra-miniature quartz crystal oscillator with an optional Enable/Disable function. Hermetically sealed in a highly reliable ceramic housing Statek have designed this oscillator to withstand high shock applications.
- -HG-SM1 SM1 Gold Plated (RoHS compliant) high shock
- -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. +V _S	



Frequency Parameters

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

Electrical Parameters

- Supply Voltage: 3.3V ±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 (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

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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Crystal Clock Oscillator Specification
CXOQ 3.3V

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