



CXOXHG

CXOXHG

Intended for applications requiring shock survivability to 10,000G (and higher), the surface-mount CXOXHG oscillator is a high-shock version of the CXOX oscillator. This oscillator consist of a CMOS compatible hybrid circuit and a state-of-the-art fundamental-mode crystal.

Model Name	Description
CXOXHG 1.8V	1.8V Verison
CXOXHG 2.5V	2.5V Version
CXOXHG 3.0V	3.0V Version
CXOXHG 3.3V	3.3V Version
CXOXHG 5.0V	5.0V Version

ISSUE 1; June 2019

Description

- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. Intended for applications requiring shock survivability to 10,000G (and higher), the surface-mount CXOXHG oscillator is a high-shock version of the CXOX oscillator. This oscillator consist of a CMOS compatible hybrid circuit and a state-of-the-art fundamental-mode crystal.
- SM1 Gold Plated (RoHS)
- SM5 Solder Dipped (RoHS)
- Please note that all data is only valid at 25°C unless otherwise stated.



Frequency Parameters

- Frequency 1.0MHz to 160.0MHz
- Frequency Tolerance $\pm 100.00\text{ppm}$
- 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
 - 12.0mA @ 130MHz
- Supply Voltage (absolute maximum rating): -0.5V to 7V

Operating Temperature Ranges

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

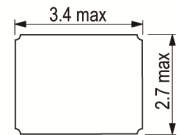
Output Details

- Output Compatibility CMOS
- Drive Capability 15pF
- Start Up Time: 5ms max

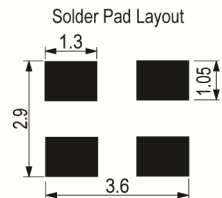
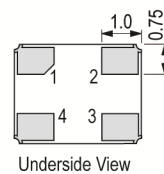
Environmental Parameters

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

Outline (mm) SM1 = Gold Plated (RoHS)



Pad Connections	Height (H) =
1. NC/EN	SM1 1.09 max
2. GND	SM3 1.21 max
3. Output	SM5 1.21 max
4. +Vs	



ISSUE 1; June 2019

Manufacturing Details

- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Low power consumption
 - Low EMI emission
 - Optional Output Enable/Disable with Tri-State
- Applications:
 - Aerospace -
 - Communications
 - Navigation
 - GPS
 - Industrial, Computer & Communications -
 - Miniature clock oscillator
 - Handheld instrumentation
 - PDA
 - Transponder/Animal migration
 - Medical -
 - Test & Diagnostic equipment
 - Handheld devices
- Solder Process Temperature: 260°C max for 20sec max

Ordering Information

- Frequency*
 - Model*
 - Termination Variant*
 - Output
 - Frequency Tolerance (@ 25°C)*
 - Frequency Stability*
 - Operating Temperature Range*
 - Pad 1 Function*
 - (*minimum required)
- Termination Variants:
 - SM1 = Gold Plated / SM5 = Solder Dipped
 - (Note: Non-RoHS compliant terminations also available - SM3 = Solder Dipped)
- Example
 - 40.0MHz CXOXHG 1.8V SM1
 - CMOS ±100ppm ±100ppm -40 to 85°C 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 1.8V ±10%

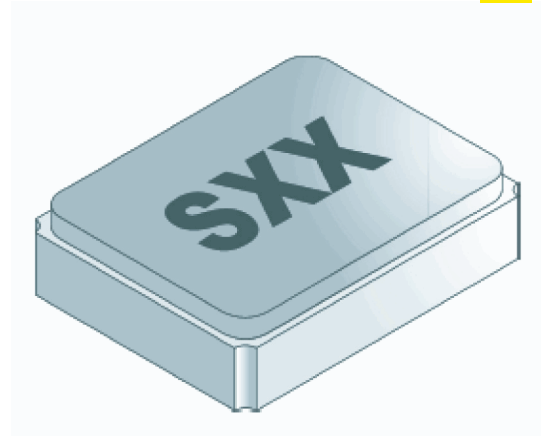
Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	160.0MHz	-10 to 70	±50.0	-	6	40/60%
		-40 to 85	±100.0	-	6	40/60%
		-55 to 125	±100.0	-	6	40/60%

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ISSUE 1; June 2019

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- SM1 Gold Plated (RoHS)
- SM5 Solder Dipped (RoHS)
- Please note that all data is only valid at 25°C unless otherwise stated.



Frequency Parameters

- Frequency 1.0MHz to 160.0MHz
- Frequency Tolerance $\pm 100.00\text{ppm}$
- 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 2.5V $\pm 10\%$
- Supply Current Typical (figures given are for the 3.3V version):
 3mA @ 24MHz
 5mA @ 32MHz
 6mA @ 50MHz
 23mA @ 130MHz
- Supply Voltage (absolute maximum rating): -0.5V to 7V

Operating Temperature Ranges

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

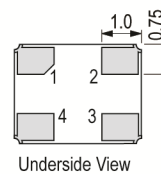
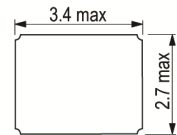
Output Details

- Output Compatibility CMOS
- Drive Capability 15pF
- Start Up Time: 5ms max

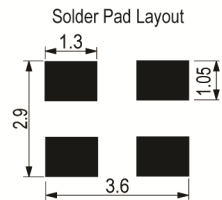
Environmental Parameters

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

Outline (mm) SM1 = Gold Plated (RoHS)



Pad Connections	Height (H) =
1. NC/EN	SM1 1.09 max
2. GND	SM3 1.21 max
3. Output	SM5 1.21 max
4. +Vs	



ISSUE 1; June 2019

Manufacturing Details

- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Low power consumption
 - Low EMI emission
 - Optional Output Enable/Disable with Tri-State
- Applications:
 - Aerospace -
 - Communications
 - Navigation
 - GPS
 - Industrial, Computer & Communications -
 - Miniature clock oscillator
 - Handheld instrumentation
 - PDA
 - Transponder/Animal migration
 - Medical -
 - Test & Diagnostic equipment
 - Handheld devices
- Solder Process Temperature: 260°C max for 20sec max

Ordering Information

- Frequency*
- Model*
- Termination Variant*
- Output
- Frequency Tolerance (@ 25°C)*
- Frequency Stability*
- Operating Temperature Range*
- Pad 1 Function*
- (*minimum required)
- Termination Variants:
 - SM1 = Gold Plated / SM5 = Solder Dipped
 - (Note: Non-RoHS compliant terminations also available - SM3 = Solder Dipped)
- Example
 - 40.0MHz CXOXHG 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	%
1.0MHz	160.0MHz	-10 to 70	±50.0	-	6	40/60%
		-40 to 85	±100.0	-	6	40/60%
		-55 to 125	±100.0	-	6	40/60%

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ISSUE 1; October 2019

Description

- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. Intended for applications requiring shock survivability to 10,000G (and higher), the surface-mount CXOXHG oscillator is a high-shock version of the CXOX oscillator. This oscillator consist of a CMOS compatible hybrid circuit and a state-of-the-art fundamental-mode crystal.
- SM1 Gold Plated (RoHS)
- SM5 Solder Dipped (RoHS)
- Please note that all data is only valid at 25°C unless otherwise stated.



Frequency Parameters

- Frequency 1.0MHz to 160.0MHz
- Frequency Tolerance $\pm 100.00\text{ppm}$
- 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 3.0V $\pm 10\%$
- Supply Current Typical (figures given are for the 3.3V version):
 3mA @ 24MHz
 5mA @ 32MHz
 6mA @ 50MHz
 23mA @ 130MHz
- Supply Voltage (absolute maximum rating): -0.5V to 7V

Operating Temperature Ranges

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

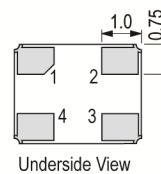
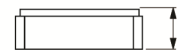
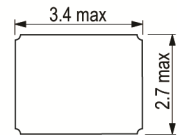
Output Details

- Output Compatibility CMOS
- Drive Capability 15pF
- Start Up Time: 5ms max

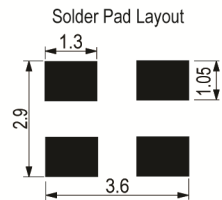
Environmental Parameters

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

Outline (mm) SM1 = Gold Plated (RoHS)



Pad Connections	Height (H) =
1. NC/EN	SM1 1.09 max
2. GND	SM3 1.21 max
3. Output	SM5 1.21 max
4. +Vs	



ISSUE 1; October 2019

Manufacturing Details

- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Low power consumption
 - Low EMI emission
 - Optional Output Enable/Disable with Tri-State
- Applications:
 - Aerospace -
 - Communications
 - Navigation
 - GPS
 - Industrial, Computer & Communications -
 - Miniature clock oscillator
 - Handheld instrumentation
 - PDA
 - Transponder/Animal migration
 - Medical -
 - Test & Diagnostic equipment
 - Handheld devices
- Solder Process Temperature: 260°C max for 20sec max

Ordering Information

- Frequency*
 - Model*
 - Termination Variant*
 - Output
 - Frequency Tolerance (@ 25°C)*
 - Frequency Stability*
 - Operating Temperature Range*
 - Pad 1 Function*
 - (*minimum required)
- Termination Variants:
 - SM1 = Gold Plated / SM5 = Solder Dipped
 - (Note: Non-RoHS compliant terminations also available - SM3 = Solder Dipped)
- Example
 - 40.0MHz CXOXHG 3.0V 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 3.0V ±10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	160.0MHz	-10 to 70	±50.0	-	6	40/60%
		-40 to 85	±100.0	-	6	40/60%
		-55 to 125	±100.0	-	6	40/60%

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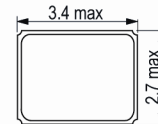
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Description

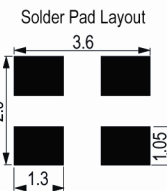
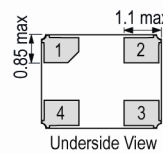
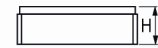
- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. Intended for applications requiring shock survivability up to 100,000g. The surface-mount CXOXHG oscillator is a high-shock version of the CXOX oscillator. This oscillator consist of a CMOS compatible hybrid circuit and a state-of-the-art fundamental-mode crystal.
- A-SM1 Gold Plated (RoHS), 5000g
- A-SM5 Solder Dipped (RoHS), 5000g
- B-SM1 Gold Plated (RoHS), 10000g
- B-SM5 Solder Dipped (RoHS), 10000g
- C-SM1 Gold Plated (RoHS), 20000g
- C-SM5 Solder Dipped (RoHS), 20000g
- D-SM1 Gold Plated (RoHS), 30000g
- D-SM5 Solder Dipped (RoHS), 30000g
- F-SM1 Gold Plated (RoHS), 50000g
- F-SM5 Solder Dipped (RoHS), 50000g
- G-SM1 Gold Plated (RoHS), 75000g
- G-SM5 Solder Dipped (RoHS), 75000g
- H-SM1 Gold Plated (RoHS), 100000g
- H-SM5 Solder Dipped (RoHS), 100000g
- Please note that all data is only valid at 25°C unless otherwise stated.



Outline (mm) A-SM1 = Gold Plated (RoHS), 5000g



Pad Connections	Height (H) =
1. EN or NC	SM1 1.09 max
2. GND	SM3 1.21 max
3. Output	SM5 1.21 max
4. +Vs	



Frequency Parameters

- Frequency: 1.0MHz to 160.0MHz
- Frequency Tolerance: ±100.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±10.00ppm to ±100.00ppm
- Ageing: ±3ppm max in 1st year

Electrical Parameters

- Supply Voltage: 3.3V ±10%
- Supply Current Typical:
 - 2.3mA @ 24 MHz
 - 3.0mA @ 32 MHz
 - 4.5mA @ 50 MHz
 - 23mA @ 130MHz
- Supply Voltage (absolute maximum rating): -0.5V to 7V

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

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Noise Parameters

- Phase Noise (@ 25MHz typ at 25°C):
 - 84dBc/Hz @ 10Hz
 - 114dBc/Hz @ 100Hz
 - 130dBc/Hz @ 1kHz
 - 142dBc/Hz @ 10kHz
 - 148dBc/Hz @ 100kHz
 - 153dBc/Hz @ 1MHz
 - 157dBc/Hz @ 5MHz
- Phase Noise (@ 60MHz typ at 25°C):
 - 78dBc/Hz @ 10Hz
 - 107dBc/Hz @ 100Hz
 - 123dBc/Hz @ 1kHz
 - 136dBc/Hz @ 10kHz
 - 142dBc/Hz @ 100kHz
 - 148dBc/Hz @ 1MHz
 - 159dBc/Hz @ 5MHz
- Phase Jitter (12kHz to 20MHz @ 3.3V):
 - 411fs RMS @ 25MHz
 - 352fs RMS @ 60MHz
- Period Jitter (typ @ 10000 cycles @ 3.3V):
 - 1.3ps RMS, 11.6ps pk-pk @ 25MHz
 - 1.3ps RMS, 11.0ps pk-pk @ 60MHz

Environmental Parameters

- Shock: 10000g, 0.5ms, 1/2 sine
- Vibration: MIL-STD-202g, Method 204D, Condition D: 20G rms, 10Hz-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Hermetically sealed ceramic package
 - Low power consumption
 - Low EMI emission
 - Optional Output Enable/Disable with Tri-State
- Applications:
 - Aerospace -
 - Communications
 - Navigation
 - GPS
 - Industrial, Computer & Communications -
 - Miniature clock oscillator
 - Handheld instrumentation
 - PDA
 - Transponder/Animal migration
 - Medical -
 - Test & Diagnostic equipment
 - Handheld devices
- Solder Process Temperature: 260°C max for 20sec max



ISSUE 1; March 2022

Ordering Information

- Frequency*
 - Model*
 - Termination Variant*
 - Output
 - Frequency Tolerance (@ 25°C)*
 - Frequency Stability*
 - Operating Temperature Range*
 - Pad 1 Function*
 - (*minimum required)
- Termination Variants:
 - SM1 = Gold Plated / SM5 = Solder Dipped
 - (Note: Non-RoHS compliant terminations also available - SM3 = Solder Dipped)
- Example
 - 40.0MHz CXOXHG 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	%
1.0MHz	160.0MHz	-10 to 70	±10.0	-	6	45/55%
		-40 to 85	±20.0	-	6	45/55%
		-55 to 125	±30.0	-	6	45/55%

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- SM1 Gold Plated (RoHS)
- SM5 Solder Dipped (RoHS)
- Please note that all data is only valid at 25°C unless otherwise stated.



Frequency Parameters

- Frequency 1.0MHz to 160.0MHz
- Frequency Tolerance $\pm 100.00\text{ppm}$
- 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 5.0V $\pm 10\%$
- Supply Current Typical:
 - 8mA @ 24MHz
 - 10mA @ 32MHz
 - 13mA @ 50MHz
 - 39mA @ 130MHz
- Supply Voltage (absolute maximum rating): -0.5V to 7V

Operating Temperature Ranges

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

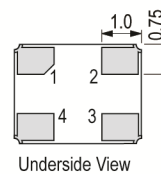
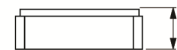
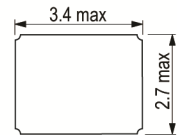
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- Drive Capability 15pF
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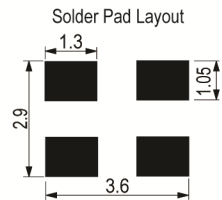
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- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G rms, 10Hz-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

Outline (mm) SM1 = Gold Plated (RoHS)



Pad Connections	Height (H) =
1. NC/EN	SM1 1.09 max
2. GND	SM3 1.21 max
3. Output	SM5 1.21 max
4. +Vs	



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Manufacturing Details

- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Low power consumption
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- Applications:
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 - Handheld instrumentation
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 - Transponder/Animal migration
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 - Handheld devices
- Solder Process Temperature: 260°C max for 20sec max

Ordering Information

- Frequency*
- Model*
- Termination Variant*
- Output
- Frequency Tolerance (@ 25°C)*
- Frequency Stability*
- Operating Temperature Range*
- Pad 1 Function*
- (*minimum required)
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 - (Note: Non-RoHS compliant terminations also available - SM3 = Solder Dipped)
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 - 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 5.0V ±10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	160.0MHz	-10 to 70	±50.0	-	6	40/60%
		-40 to 85	±100.0	-	6	40/60%
		-55 to 125	±100.0	-	6	40/60%

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Crystal Clock Oscillator Specification
CXOXHG 5.0V

ISSUE 1; June 2019

USA: +1 760 668 8935

Web: www.iqdfrequencyproducts.com

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