



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

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Description

- 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

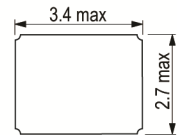
- Shock: 10000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G rms, 10Hz-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

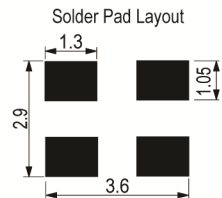
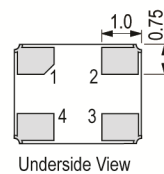
- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Low power consumption
 - Low EMI emission
 - Optional Output Enable/Disable with Tri-State
- Applications:
 - Aerospace -
 - Communications
 - Navigation
 - GPS
 - Industrial, Computer & Communications -
 - Miniature clock oscillator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



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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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 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 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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Description

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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

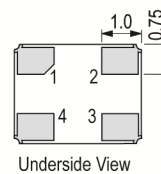
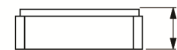
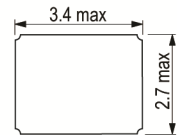
Environmental Parameters

- 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

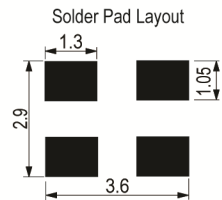
Manufacturing Details

- 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

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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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 (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	%
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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Description

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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: ±100.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±50.00ppm to ±100.00ppm
- Ageing: ±5ppm max in 1st year

Electrical Parameters

- Supply Voltage: 3.0V ±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

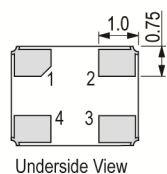
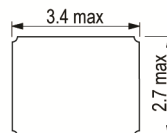
- Shock: 10000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G rms, 10Hz-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

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

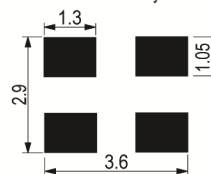


Outline (mm) SM1 = Gold Plated (RoHS)



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	

Solder Pad Layout



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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 (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 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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- 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: 3.3V $\pm 10\%$
- Supply Current Typical:
 - 3mA @ 24 MHz
 - 5mA @ 32 MHz
 - 6mA @ 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

Environmental Parameters

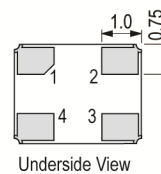
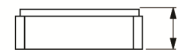
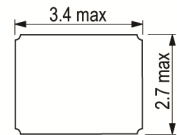
- Shock: 10000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G rms, 10Hz-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

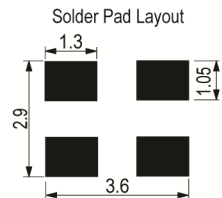
- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Hermetically sealed ceramic package
 - Low power consumption
 - Low EMI emission
 - Optional Output Enable/Disable with Tri-State
- Applications:
 - Aerospace -
 - Communications
 - Navigation
 - GPS
 - Industrial, Computer & Communications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



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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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 (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 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	±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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- 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: ±100.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±50.00ppm to ±100.00ppm
- Ageing: ±5ppm max in 1st year

Electrical Parameters

- Supply Voltage: 5.0V ±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

Output Details

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

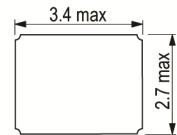
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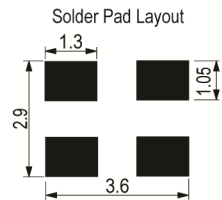
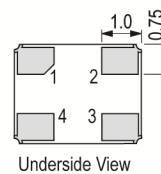
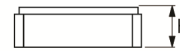
Manufacturing Details

- Features:
 - High shock resistance
 - Low acceleration sensitivity
 - Low power consumption
 - Low EMI emission
 - Optional Output Enable/Disable with Tri-State
- Applications:
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- Solder Process Temperature: 260°C max for 20sec max

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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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 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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