



## CXOXHG

### CXOXHG

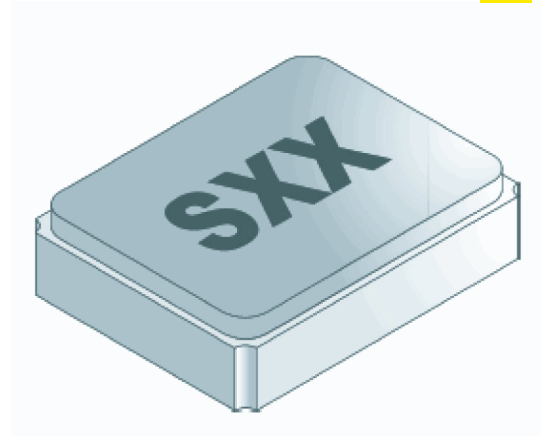
Intended for applications requiring shock survivability to 10,000G (and higher), the surface-mount CXOXHG oscillator is a high-shock version of the CXOX oscillator. This oscillator consist of a CMOS compatible hybrid circuit and a state-of-the-art fundamental-mode crystal.

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

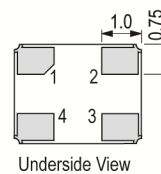
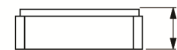
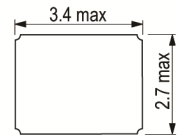
### Output Details

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

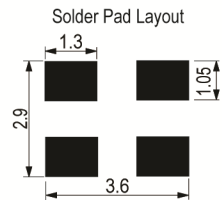
### Environmental Parameters

- 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

**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

**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

### 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 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

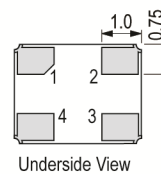
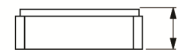
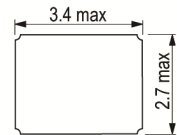
### Output Details

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

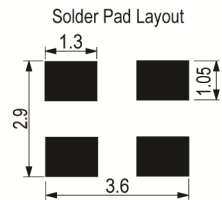
### Environmental Parameters

- 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-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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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

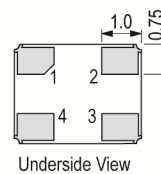
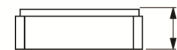
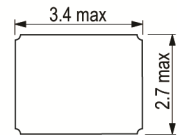
### Output Details

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

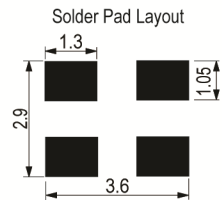
### Environmental Parameters

- 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-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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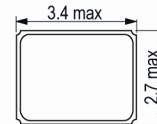
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### Description

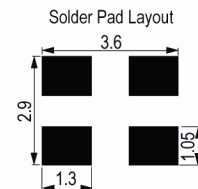
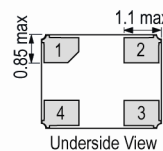
- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. Intended for applications requiring shock survivability up to 100,000g. The surface-mount CXOXHG oscillator is a high-shock version of the CXOX oscillator. This oscillator consist of a CMOS compatible 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-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	%
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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ISSUE 1; June 2019

### 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: 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

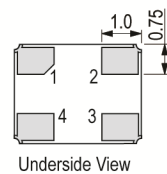
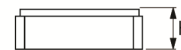
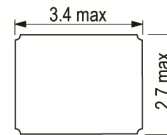
### Output Details

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

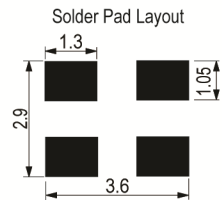
### Environmental Parameters

- 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 5.0V 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-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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Crystal Clock Oscillator Specification  
**CXOXHG 5.0V**

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**ISSUE 1; June 2019**

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