



CXOLP

CXOLP is an ultra-miniature, low power, fast start-up time, high shock and low ageing quartz crystal oscillator hermetically sealed in a ceramic housing.

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

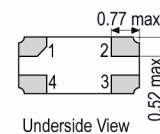
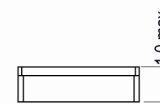
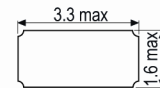
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Description

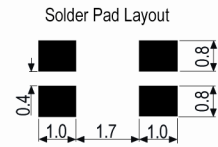
- CXOLP is an ultra-miniature, low power, fast start-up time, high shock and low ageing quartz crystal oscillator hermetically sealed in a ceramic housing.
- SM1 Gold Plated (RoHS)
- SM4 Solder Plated (RoHS)
- FEATURES:
 - Low current consumption (55µA @ 1MHz)
 - Fast start-up (1ms typical)
 - Tight tolerance
 - High shock resistance (10000G typical)
 - Low ageing
 - Hermetically sealed ceramic package
- APPLICATIONS:
 - Military, Aerospace & Avionics
 - Communications
 - Battery Operated Devices
 - Navigation
 - ICAD Devices
 - GPS
 - Industrial, Computer & Communications
 - Wireless Telemetry
 - Handheld instrumentation
 - Transponder/Animal migration
 - Medical
 - Patient monitoring
 - Infusion Pumps



Outline (mm) SM1 = Gold Plated (RoHS)



- Pad Connections
1. Output
 2. GND
 3. Enable/Disable/NC
 4. +Vs



Frequency Parameters

- Frequency: 1.0MHz to 8.5MHz
- Frequency Tolerance: ±25.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±10.00ppm to ±100.00ppm
- Ageing: ±2ppm max in 1st year
- Note: Other Frequency Tolerances are available - please contact an IQD sales office

Electrical Parameters

- Supply Voltage: 1.8V ±10%
- Supply Voltage (absolute maximum rating): -0.5V to 5.0V
- Supply Current (@ 1.8V):
 - 2MHz (@ 25°C and load=5pF): 65µA typ
 - 4MHz (@ 25°C and load=5pF): 115µA typ
 - 8MHz (@ 25°C and load=5pF): 210µA typ
- Please note that all data is only valid at 25°C unless otherwise stated.

Operating Temperature Ranges

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

Output Details

- Output Compatibility: CMOS
- Drive Capability: 5pF
- Note: Other output loads available - please contact IQD sales office.
- Output Levels:
 - Output High Voh: 90%Vs min
 - Output Low Vol: 10%Vs max
- Rise Time (@ 3.3V, 5pF//1MΩ load): 5.5ns typ
- Fall Time (@ 3.3V, 5pF//1MΩ load): 5.0ns typ

Output Control

- Start Up Time: 1ms typ

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Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: 10000G, 0.3ms, 1/2 sine
- Higher Shock available - please contact IQD sales office.
- Vibration: per MIL-STD-202G, Method 204D. Cond.D, 20G, 10Hz-2000Hz swept sine

Manufacturing Details

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

Ordering Information

- Frequency*
- Model*
- Supply Voltage*
- Termination Variant*
- Output
- Frequency Tolerance (@ 25°C)*
- Operating Temperature Range*
- Pad 3 Function*
(minimum required*)
- Termination Variants:
SM1 = Gold Plated (RoHS)
SM4 = Solder Plated (RoHS)
- Example
2MHz CXOLP 1.8V SM1
CMOS ±50ppm -40 to 85C NC

Compliance

- RoHS Status (2011/65/EU) Compliant
- 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	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	8.5MHz	-10 to 70	±10.0	-	-	40/60%
		-40 to 85	±20.0	-	-	40/60%
		-55 to 125	±40.0	-	-	40/60%

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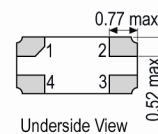
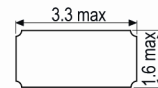
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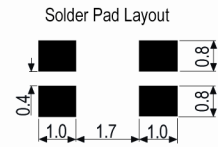
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- SM4 Solder Plated (RoHS)
- FEATURES:
 - Low current consumption (55µA @ 1MHz)
 - Fast start-up (1ms typical)
 - Tight tolerance
 - High shock resistance (10000G typical)
 - Low ageing
 - Hermetically sealed ceramic package
- APPLICATIONS:
 - Military, Aerospace & Avionics
 - Communications
 - Battery Operated Devices
 - Navigation
 - ICAD Devices
 - GPS
 - Industrial, Computer & Communications
 - Wireless Telemetry
 - Handheld instrumentation
 - Transponder/Animal migration
 - Medical
 - Patient monitoring
 - Infusion Pumps



Outline (mm) SM1 = Gold Plated (RoHS)



- Pad Connections
1. Output
 2. GND
 3. Enable/Disable/NC
 4. +Vs



Frequency Parameters

- Frequency: 1.0MHz to 8.5MHz
- Frequency Tolerance: ±25.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±10.00ppm to ±100.00ppm
- Ageing: ±2ppm max in 1st year
- Note: Other Frequency Tolerances are available - please contact an IQD sales office

Electrical Parameters

- Supply Voltage: 2.5V ±10%
- Supply Voltage (absolute maximum rating): -0.5V to 5.0V
- Supply Current (@ 2.5V):
 - 2MHz (@ 25°C and load=5pF): 85µA typ
 - 4MHz (@ 25°C and load=5pF): 150µA typ
 - 8MHz (@ 25°C and load=5pF): 285µA typ
- Please note that all data is only valid at 25°C unless otherwise stated.

Operating Temperature Ranges

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

Output Details

- Output Compatibility: CMOS
- Drive Capability: 5pF
- Note: Other output loads available - please contact IQD sales office.
- Output Levels:
 - Output High Voh: 90%Vs min
 - Output Low Vol: 10%Vs max
- Rise Time (@ 3.3V, 5pF//1MΩ load): 5.5ns typ
- Fall Time (@ 3.3V, 5pF//1MΩ load): 5.0ns typ

Output Control

- Start Up Time: 1ms typ

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Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: 10000G, 0.3ms, 1/2 sine
- Higher Shock available - please contact IQD sales office.
- Vibration: per MIL-STD-202G, Method 204D. Cond.D, 20G, 10Hz-2000Hz swept sine

Manufacturing Details

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

Ordering Information

- Frequency*
- Model*
- Supply Voltage*
- Termination Variant*
- Output
- Frequency Tolerance (@ 25°C)*
- Operating Temperature Range*
- Pad 3 Function*
(minimum required*)
- Termination Variants:
SM1 = Gold Plated (RoHS)
SM4 = Solder Plated (RoHS)
- Example
2MHz CXOLP 2.5V SM1
CMOS ±50ppm -40 to 85C NC

Compliance

- RoHS Status (2011/65/EU) Compliant
- 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	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	8.5MHz	-10 to 70	±10.0	-	-	40/60%
		-40 to 85	±20.0	-	-	40/60%
		-55 to 125	±40.0	-	-	40/60%

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Description

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 - Handheld instrumentation
 - Transponder/Animal migration
 - Medical
 - Patient monitoring
 - Infusion Pumps



Frequency Parameters

- Frequency 1.0MHz to 8.5MHz
- Frequency Tolerance ±25.00ppm
- Tolerance Condition @ 25°C
- Frequency Stability ±10.00ppm to ±100.00ppm
- Ageing ±2ppm max in 1st year
- Note: Other Frequency Tolerances are available - please contact an IQD sales office

Electrical Parameters

- Supply Voltage 3.0V ±10%
- Supply Voltage (absolute maximum rating): -0.5V to 5.0V
- Supply Current (@ 3.3V):
 - 2MHz (@ 25°C and load=5pF): 110µA typ
 - 4MHz (@ 25°C and load=5pF): 175µA typ
 - 8MHz (@ 25°C and load=5pF): 365µA typ
- Please note that all data is only valid at 25°C unless otherwise stated.

Operating Temperature Ranges

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

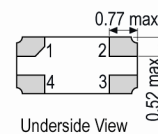
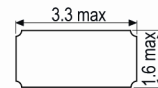
Output Details

- Output Compatibility CMOS
- Drive Capability 5pF
- Note: Other output loads available - please contact IQD sales office.
- Output Levels:
 - Output High Voh: 90%Vs min
 - Output Low Vol: 10%Vs max
- Rise Time (@ 3.3V, 5pF//1MΩ load): 5.5ns typ
- Fall Time (@ 3.3V, 5pF//1MΩ load): 5.0ns typ

Output Control

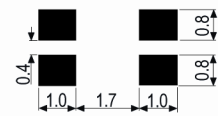
- Start Up Time: 1ms typ

Outline (mm) SM1 = Gold Plated (RoHS)



- Pad Connections
1. Output
 2. GND
 3. Enable/Disable/NC
 4. +Vs

Solder Pad Layout



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Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: 10000G, 0.3ms, 1/2 sine
- Higher Shock available - please contact IQD sales office.
- Vibration: per MIL-STD-202G, Method 204D. Cond.D, 20G, 10Hz-2000Hz swept sine

Manufacturing Details

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

Ordering Information

- Frequency*
Model*
Supply Voltage*
Termination Variant*
Output
Frequency Tolerance (@ 25°C)*
Operating Temperature Range*
Pad 3 Function*
(minimum required*)
- Termination Variants:
SM1 = Gold Plated (RoHS)
SM4 = Solder Plated (RoHS)
- Example
2MHz CXOLP 3.0V SM1
CMOS ±50ppm -40 to 85C NC

Compliance

- RoHS Status (2011/65/EU) Compliant
- 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	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	8.5MHz	-10 to 70	±10.0	-	-	40/60%
		-40 to 85	±20.0	-	-	40/60%
		-55 to 125	±40.0	-	-	40/60%

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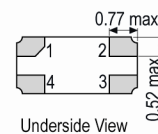
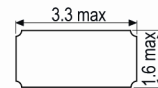
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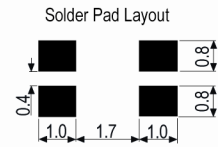
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Outline (mm) SM1 = Gold Plated (RoHS)



Pad Connections
 1. Output
 2. GND
 3. Enable/Disable/NC
 4. +Vs



Frequency Parameters

- Frequency: 1.0MHz to 8.5MHz
- Frequency Tolerance: ±25.00ppm
- Tolerance Condition: @ 25°C
- Frequency Stability: ±10.00ppm to ±100.00ppm
- Ageing: ±2ppm max in 1st year
- Note: Other Frequency Tolerances are available - please contact an IQD sales office

Electrical Parameters

- Supply Voltage: 3.3V ±10%
- Supply Voltage (absolute maximum rating): -0.5V to 5.0V
- Supply Current:
 - 2MHz (@ 25°C and load=5pF): 110µA typ
 - 4MHz (@ 25°C and load=5pF): 175µA typ
 - 8MHz (@ 25°C and load=5pF): 365µA typ
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Operating Temperature Ranges

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Output Details

- Output Compatibility: CMOS
- Drive Capability: 5pF
- Note: Other output loads available - please contact IQD sales office.
- Output Levels:
 - Output High Voh: 90%Vs min
 - Output Low Vol: 10%Vs max
- Rise Time (@ 3.3V, 5pF//1MΩ load): 5.5ns typ
- Fall Time (@ 3.3V, 5pF//1MΩ load): 5.0ns typ

Output Control

- Start Up Time: 1ms typ

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Environmental Parameters

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Termination Variant*
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Frequency Tolerance (@ 25°C)*
Operating Temperature Range*
Pad 3 Function*
(minimum required*)
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- RoHS Status (2011/65/EU) Compliant
- 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	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	8.5MHz	-10 to 70	±10.0	-	-	40/60%
		-40 to 85	±20.0	-	-	40/60%
		-55 to 125	±40.0	-	-	40/60%

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