

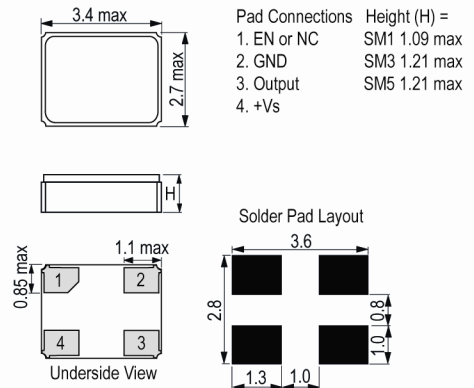
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Description

- The CXOXLPN ultra miniature and ultra low phase noise and jitter oscillator consists of a CMOS/TTL compatible hybrid circuit and a state-of-the-art, miniature, 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
- Features:
 - High shock resistance (HG version) - 50000G option
 - CMOS output with Enable/Disable
 - Low phase noise and jitter
 - Full military testing available
 - Low acceleration sensitivity - 0.5ppb/G or better option
 - No PLL artifacts
 - Hermetically sealed ceramic package
- Applications:
 - Military & Aerospace
 - Smart munitions
 - Communications
 - Navigation
 - GPS
 - Industrial, Computer & Communications
 - Miniature clock oscillator
 - Handheld instrumentation
 - PDA
 - Transponder/Animal migration
 - Medical
 - Test & diagnostic equipment
 - Handheld devices



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



Frequency Parameters

- Frequency: 20.0MHz to 50.0MHz
- Frequency Tolerance: $\pm 50.00\text{ppm}$
- Tolerance Condition: @ 25°C
- Frequency Stability: $\pm 30.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing: $\pm 3\text{ppm}$ max in 1st year @ 25°C

Electrical Parameters

- Supply Voltage: 1.8V $\pm 10\%$
- Supply Current (typical @ no-load and 1.8V):
 - 0.5mA @ 20 MHz
 - 0.6mA @ 30 MHz
 - 0.9mA @ 50 MHz
- Supply Voltage (absolute maximum rating): -0.3V to 4.0V

Operating Temperature Ranges

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

Sales Office Contact Details:

UK: +44 (0)1460 270200
Germany: 0800 1808 443

France: 0800 901 383
USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com

Output Details

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

Output Control

- Enable/Disable (EN):
Logic 1 to pin 1, output enabled
Logic 0 to pin 1, output disabled, output goes to high impedance state, current consumption low, internal oscillator stops.
When pad 1 is allowed to float, it is held high by an internal pull-up resistor.
- No Connection (NC): Pad 1 not connected internally.

Noise Parameters

- Phase Noise (@ 25MHz typ at 25°C):
 - 106dBc/Hz @ 10Hz
 - 133dBc/Hz @ 100Hz
 - 151dBc/Hz @ 11Hz
 - 160dBc/Hz @ 10kHz
 - 161dBc/Hz @ 100kHz
 - 162dBc/Hz @ 1MHz
 - 162dBc/Hz @ 5MHz
- Phase Noise (@ 50MHz typ at 25°C):
 - 93dBc/Hz @ 10Hz
 - 124dBc/Hz @ 100Hz
 - 149dBc/Hz @ 11Hz
 - 159dBc/Hz @ 10kHz
 - 162dBc/Hz @ 100kHz
 - 162dBc/Hz @ 1MHz
 - 162dBc/Hz @ 5MHz
 - 162dBc/Hz @ 20MHz
- Phase Jitter (12kHz to 20MHz @ 2.5V):
 - 160fs RMS @ 25MHz
 - 179fs RMS @ 50MHz
- Period Jitter (typ @ 10000 cycles @ 3.3V):
 - 1.15ps RMS, 9.6ps pk-pk @ 25MHz
 - 1.02ps RMS, 8.1ps pk-pk @ 50MHz

Environmental Parameters

- Shock (standard): 5000G, 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

- Solder Process Temperature: 260°C max for 20sec max

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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 (RoHS)
SM5 = Solder Dipped (RoHS)
(Note: Non-RoHS compliant terminations also available - SM3 = Solder Dipped)
- Example
20.0MHz CXOXLPN 1.8V A-SM1
CMOS ±50ppm ±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	%
20.0MHz	50.0MHz	-10 to 70	±30.0	-	6	45/55%
		-40 to 85	±30.0	-	6	45/55%
		-55 to 125	±50.0	-	6	45/55%

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