



ISSUE 1; April 2016

Description

- The HGXO crystal oscillator is a surface-mount oscillator that can survive extremely high shocks - up to 100,000G. The design consists of a hermetically-sealed high-shock crystal and a CMOS compatible integrated circuit housed in a 7.5 x 5mm SMD ceramic package.
- A-SM1 5000G, Gold Plated (RoHS)
- A-SM3 5000G, Solder Dipped (non RoHS)
- A-SM5 5000G, Solder Dipped (RoHS)
- B-SM1 10000G, Gold Plated (RoHS)
- B-SM3 10000G, Solder Dipped (non RoHS)
- B-SM5 10000G, Solder Dipped (RoHS)
- C-SM1 20000G, Gold Plated (RoHS)
- C-SM3 20000G, Solder Dipped (non RoHS)
- C-SM5 20000G, Solder Dipped (RoHS)
- D-SM1 30000G, Gold Plated (RoHS)
- D-SM3 30000G, Solder Dipped (non RoHS)
- D-SM5 30000G, Solder Dipped (RoHS)
- F-SM1 50000G, Gold Plated (RoHS)
- F-SM3 50000G, Solder Dipped (non RoHS)
- F-SM5 50000G, Solder Dipped (RoHS)
- G-SM1 75000G, Gold Plated (RoHS)
- G-SM3 75000G, Solder Dipped (non RoHS)
- G-SM5 75000G, Solder Dipped (RoHS)
- H-SM1 100000G, Gold Plated (RoHS)
- H-SM3 100000G, Solder Dipped (non RoHS)
- H-SM5 100000G, Solder Dipped (RoHS)
- FEATURES:
 - Mechanical shock survivability up to 100000G CMOS output, TTL on request Optional Output Enable/Disable with Tri-State Low EMI emission Full military testing to MIL-PRF-55310 available Low acceleration sensitivity available
- APPLICATIONS: Industrial -Transmitter reference oscillator Clock oscillator Military & Aerospace -Smart Munitions Projectile Electronics
- Please note that all data is only valid at 25°C unless otherwise stated.

Frequency Parameters

- Frequency
- Frequency Tolerance
- Tolerance Condition
- ±10.00ppm to ±100.00ppm

3.3V ±10%

460.0kHz to 50.0MHz

- ndition @ 25°C ability ±10.00ppm to ±40.00ppm
- Frequency Stability
- Ageing

- ±5ppm typ in the 1st year
- Note: Frequency Stability does not include Frequency Tolerance @ 25°C

Electrical Parameters

- Supply Voltage
- Absolute Maximum Supply Voltage: -0.5V to 7.0V

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



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Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C

-55 to 125°C

Output Details

- Output Compatability
 - Drive Capability
- Note: TTL loads and higher CMOS loads are available please contact an IQD Sales Office

CMOS

15pF

Output Control

- Start-Up Time: 5ms max
- Enable/Disable (EN option):
- Logic '1' to pad 1 enables oscillator output Logic '0' to pad 1 disables the oscillator output, when disabled the output goes to the high impedance state (very low current, internal oscillator stops) No connection to pad 1 enables oscillator output When pad 1 changes from logic 0 to logic 1, output recovery is delayed
- Tri-State (TS option):

Logic '1' to pad 1 enables oscillator output Logic '0' to pad 1 disables the oscillator output, when disabled the output goes to the high impedance state (low current) No connection to pad 1 enables oscillator output When pad 1 changes from logic 0 to logic 1, output recovery is immediate

 No Connection (NC option): Pad 1 not connected internally, no enable/disable or tri-state function

Environmental Parameters

- Shock: 0.5 ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G, 10-2000Hz swept sine
- Note: Random vibration testing also available please contact an IQD Sales Office
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

Maximum Process Temperature: 260°C for 20sec

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Ordering Information

 Frequency* Model* Supply Voltage Shock Requirement* Termination Variant* Output Compatibility Frequency Tolerance (@ 25°C)* Frequency Stability (over operation Operating Temperature Range* Pad 1 Function* (*minimum required) Shock Level Options: Code A = 5000G Code B = 10000G Code C = 20000G Code C = 20000G Code C = 20000G Code C = 30000G Code F = 50000G Code F = 50000G Code F = 50000G Code H = 100000G Termination Variants: SM1 = Gold Plated SM5 = Solder Dipped (Note: non-RoHS SM3 terminatic contact an IQD Sales Office) Example 50.0MHz HGXO 3.3V 5000G D- CMOS ±10ppm ±100ppm -40 to 	ting temperature range)* ions are available - please -SM1 o 85C NC
Compliance	
 PoHS Status (2011/65/ELI) 	Ontional
 REACh Status MSL Rating (JDEC-STD-033): 	Compliant 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	%
460.00kHz	50.0MHz	-10 to 70	±10.0	-	6	40/60%
		-40 to 85	±20.0	-	6	40/60%
		-55 to 125	±40.0	-	6	40/60%

This document was correct at the time of printing; please contact your local sales office for the latest version. <u>Click to view latest version on our website.</u>

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