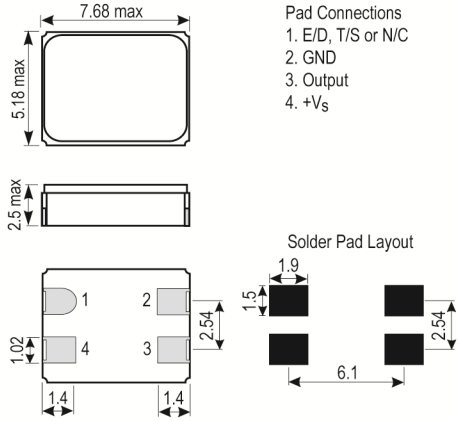
Crystal Clock Oscillator Specification
HGXO 3.3V

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.

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



Frequency Parameters

Frequency	460.0kHz to 50.0MHz
Frequency Tolerance	±10.00ppm to ±100.00ppm
Tolerance Condition	@ 25°C
Frequency Stability	±10.00ppm to ±40.00ppm
Ageing	±5ppm typ in the 1st year

- Note: Frequency Stability does not include Frequency Tolerance @ 25°C

Electrical Parameters

Supply Voltage	3.3V ±10%

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

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Operating Temperature Ranges

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

Output Details

- Output Compatability CMOS
- Drive Capability 15pF
- Note: TTL loads and higher CMOS loads are available - please contact an IQD Sales Office

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 operating temperature range)*
  Operating Temperature Range*
  Pad 1 Function*
  (*minimum required)
- Shock Level Options:
  Code A = 5000G
  Code B = 10000G
  Code C = 20000G
  Code D = 30000G
  Code F = 50000G
  Code G = 75000G
  Code H = 100000G
- Termination Variants:
  SM1 = Gold Plated
  SM5 = Solder Dipped
  (Note: non-RoHS SM3 terminations are available - please contact an IQD Sales Office)
- Example
  50.0MHz HGXO 3.3V 5000G D-SM1
  CMOS ±10ppm ±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	%
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%

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