



HGXO

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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.

Model Name	Description
HGXO 3.3V	A 3.3V Version
HGXO 5.0V	A 5.0V Version

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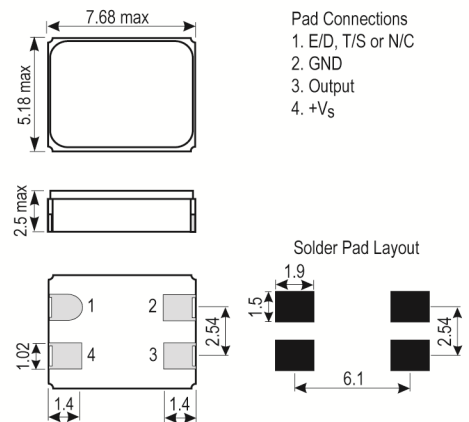
Description



- This product is designed and manufactured by Statek Corporation in California, USA and distributed by IQD. 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
 - Low acceleration sensitivity available
- 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

Operating Temperature Ranges

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

Output Details

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

ISSUE 1; June 2019**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

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 (2015/863/EU) Optional
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable



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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	%
460.0kHz	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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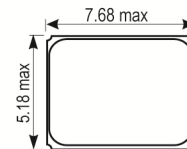
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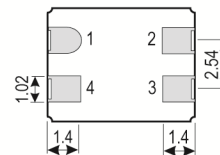
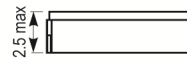
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- C-SM1 20000G, Gold Plated (RoHS)
- C-SM5 20000G, Solder Dipped (RoHS)
- D-SM1 30000G, Gold Plated (RoHS)
- D-SM5 30000G, Solder Dipped (RoHS)
- F-SM1 50000G, Gold Plated (RoHS)
- F-SM5 50000G, Solder Dipped (RoHS)
- G-SM1 75000G, Gold Plated (RoHS)
- G-SM5 75000G, Solder Dipped (RoHS)
- H-SM1 100000G, Gold Plated (RoHS)
- H-SM5 100000G, Solder Dipped (RoHS)
- Please note that all data is only valid at 25°C unless otherwise stated.



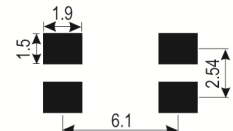
Outline (mm) A-SM1 = 5000G, Gold Plated (RoHS)



- Pad Connections
1. E/D, T/S or N/C
 2. GND
 3. Output
 4. +V_S



Solder Pad Layout



Frequency Parameters

- Frequency: 460.0kHz to 50.0MHz
- Frequency Tolerance: ±10.00ppm to ±100.00ppm @ 25°C
- Tolerance Condition: @ 25°C
- Frequency Stability: ±10.00ppm to ±100.00ppm
- Ageing: ±5ppm typ in the 1st year
- Note: Frequency Stability does not include the Frequency Tolerance @ 25°C

Electrical Parameters

- Supply Voltage: 5.0V ±10%
- Absolute Maximum Supply Voltage: -0.5V to 7.0V

Operating Temperature Ranges

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

Output Details

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

Output Control

- Enable/Disable or Tri-State Options (EN/TS):
 Logic '1' to pad 1, output enabled
 Logic '0' to pad 1, output disabled, output goes to high impedance state
 (EN version, internal oscillator stops, low current)
 (TS version, internal oscillator operates, fast output recovery)

Option NC:

No internal connection to pad 1 (no EN or TS function)

- Start-Up Time: 5ms max

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Environmental Parameters

- Shock: Shock Requirement, 0.5ms, 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

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Operating Temperature Range*
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- Shock Level Options:
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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 compliant terminations are available - please contact an IQD Sales Office)
- Example
32.0MHz HGXO 5.0V D-SM1
CMOS ±100ppm ±100ppm -40 to 80C 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
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Courtesy of Statek Corporation

Crystal Clock Oscillator Specification HGXO 5.0V

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