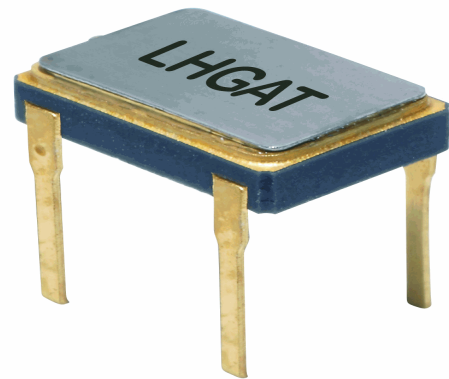


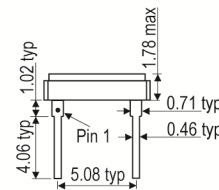
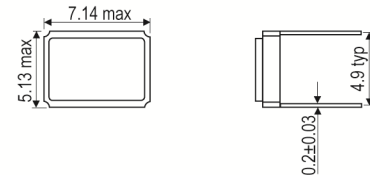
ISSUE 1; March 2016

Description

- An increasing number of high temperature applications require the use of leaded (through-hole) ceramic packaged oscillators. For these applications, IQD offers the LHGAT 7 x 5mm crystal oscillator. The oscillator is designed to operate over a temperature range of -55 to 125°C with high shock survivability.
- A-SM1 5000G, Gold Plated (RoHS)
- A-SM5 5000G, Solder Dipped (RoHS)
- B-SM1 10000G, Gold Plated (RoHS)
- B-SM5 10000G, Solder Dipped (RoHS)
- C-SM1 20000G, Gold Plated (RoHS)
- C-SM5 20000G, Solder Dipped (RoHS)
- D-SM1 30000G, Gold Plated (RoHS)
- D-SM5 30000G, Solder Dipped (RoHS)
- FEATURES:
 - Excellent stability over temperature
 - High shock resistance
 - CMOS output - output enable/disable
 - Hermetically sealed ceramic package - 7 x 5mm
 - Double hermetically sealed package option
 - Through-hole leaded package
 - Reduces mechanical and thermal mounting stresses
 - Robust lead-attach eutectic brazing process
 - Gold plated Kovar leads
 - Full military testing available
- APPLICATIONS:
 - Military and Aerospace -
 - Navigation / Communications
 - Avionics applications
 - Flight recorder
 - Engine control
- Please note that all data is only valid at 25°C unless otherwise stated.



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



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

Frequency Parameters

- Frequency 320.0kHz to 50.0MHz
- Frequency Tolerance $\pm 20.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Tolerance Condition @ 25°C
- Frequency Stability $\pm 15.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing $\pm 5\text{ppm}$ max 1st year @ 25°C
- Frequency Stability does not include Frequency Tolerance @ 25°C
- Note: Tighter Frequency Tolerances and higher Operating Temperatures (up to 200°C) are available - please contact an IQD Sales Office

Electrical Parameters

- Supply Voltage 2.5V $\pm 10\%$
- Supply Current (typical for the 3.3V version):
 - 24MHz - 3.0mA
 - 32MHz - 5.0mA
 - 40MHz - 5.5mA
 - 50MHz - 6.0mA
- Absolute Maximum Supply Voltage: -0.5V to 4.0V
- Note: Tighter Duty Cycles are available - please contact an IQD Sales Office

Sales Office Contact Details:

UK: +44 (0)1460 270200

France: 0800 901 383

Email: info@iqdfrequencyproducts.com

Germany: 0800 1808 443

USA: +1.760.318.2824

Web: www.iqdfrequencyproducts.com

Operating Temperature Ranges

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

Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

Output Control

- Start-Up Time: 5ms max

Environmental Parameters

- Shock: Level (A to D), 0.5ms, 1/2 sine
- Vibration: 20G, 10-2000Hz swept sine
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

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

Ordering Information

- Frequency*
- Model*
- Supply Voltage
- Shock Level*
- Terminations Variant*
- Output
- Frequency Tolerance (@ 25°C)*
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Pin 1 Function*
- (*minimum required)
- Shock Level Options:
 - A = 5000G (standard)
 - B = 10000G
 - C = 20000G
 - D = 30000G

Note: Shock levels above 30000G are available - please contact an IQD Sales Office
- Termination Variants:
 - SM1 = Gold Plated
 - SM5 = Solder Dipped

Note: non-RoHS compliant terminations are available - please contact an IQD Sales Office
- Pin 1 Function Options:
 - EN = Enable/Disable
 - TS = Tri-State
 - NC = No connection
- Example
 - 10.0MHz LHGAT 2.5V A-SM1
 - CMOS ±50ppm ±100ppm -40 to 85C EN

Compliance

- RoHS Status (2011/65/EU) Optional
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Tube Supplied in tubes
- Pack Size: 1

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Electrical Specification - maximum limiting values 2.5V \pm 10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
320.00kHz	50.0MHz	-10 to 70	\pm 15.0	-	8	40/60%
		-40 to 85	\pm 30.0	-	8	40/60%
		-55 to 125	\pm 40.0	-	8	40/60%

This document was correct at the time of printing; please contact your local sales office for the latest version.

[Click to view latest version on our website.](#)

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