LHTAT OSCILLATORS

Leaded High Temperature/High Shock — 320kHz to 50MHz

FEATURES

- **High temperature operation up to 200°C**
- **Excellent stability over temperature**
- **High shock resistance**
- **CMOS output**
- **Through-hole leaded package - reduces mounting stress**
- **Robust lead attach-eutectic brazing process**
- **Gold plated Kovar leads**

DESCRIPTION

For applications with high operating temperatures such as downhole instrumentation, rotary shaft sensors and underground boring tools. Designed and manufactured in USA by Statek Inc.

SPECIFICATION

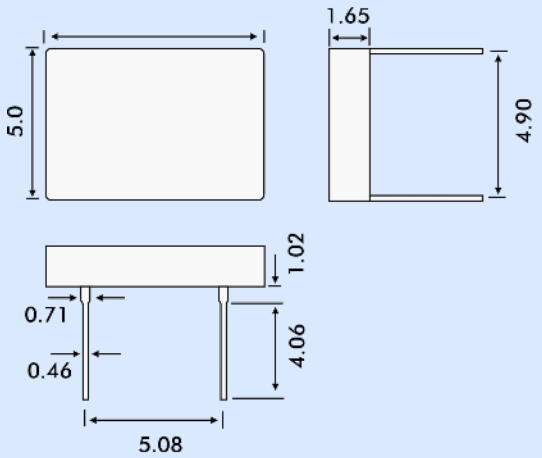
Specifications are typical at 25°C unless otherwise indicated. Tighter specifications are available, contact Euroquartz technical sales.

Supply Voltage:	+3.3 ±10%
Calibration Tolerance:	±50ppm or tighter as reqd.
Frequency Stability	
25° ~ +150°C:	±100ppm
25° ~ +175°C:	±150ppm
25° ~ +200°C:	±175ppm
Total Tolerance:	±200ppm for 25° to 200°C
Supply Current (Typical)	
24MHz:	3.0mA
32MHz:	5.0mA
50MHz:	6.0mA
Output Load (CMOS):	15pF
Start-up Time:	5ms max.
Rise/Fall Time:	10ns typical
Duty Cycle:	60/40%
Ageing first year:	±5ppm max. at 25°C
Ageing:	±100ppm max. at 200°C
Shock Survival	
Standard:	5,000g, 0.3ms, ½ sine
HG version:	30,000g, 0.3ms, ½ sine
Vibration Survival:	20g, 10~2000Hz swept sine
Operating Temp. Range:	-55°C to 225°C

ABSOLUTE MAXIMUM RATINGS

Supply Voltage:	-0.5V to +4.0V
Maximum Process Temperature:	260°C for 20 seconds
Storage Temperature:	-55° to +125°C

OUTLINE & DIMENSIONS



Lead thickness: 0.2 ±0.03mm
Lead plating: Gold/Nickel over tungsten

ENABLE/DISABLE OPTIONS (E/N)

LHTAT oscillators have two enable/disable options, designated E & N. The E version has a tristate output and stops oscillating internally when the output is placed in a high Z state. The N version does not have the control pin, Pin1, connected internally so there is no enable/disable function with this option.

ENABLE/DISABLE OPTION E - FUNCTION TABLE

	Enable (Pin1 High*)	Disable (Pin 1 Low)
Output	Frequency Output	High Z state
Oscillator	Oscillates	Stops
Current	Normal	Very low

**When Pin 1 is allowed to float it is held by an internal pull-up resistor*

PACKAGING

LHTAT oscillators are supplied tube packed.

HOW TO ORDER LHTAT OSCILLATORS

LHTAT **4** **A** **E** **SM1** **-** **20.0M** **–** **/** **–** **/** **200** **/** **H**

- **4** — Supply Voltage: 4 = 3.3V
- **A** — Shock Level: A = 5000g, B = 10000g, C = 20000g, D = 30000g
- **E** — Enable/Disable option E or N
- **SM1** — Terminations: Blank = SM1 = Gold plated, SM5 = Solder dipped (lead free)
- **20.0M** — Frequency: M = MHz, k = kHz
- **–** — Calibration Tolerance at 25°C (in ±ppm)
- **–** — Frequency Stability over temperature range (in ±ppm)
- **200** — Total Frequency Tolerance (±ppm)
- **H** — Temp. Range: H = 25° to 200°C, S = customer specified temp. range

OR

50 **/** **175** **/** **-** **/** **H**

- **50** — Calibration Tolerance at 25°C (in ±ppm)
- **175** — Frequency Stability over temp. range (in ±ppm)
- **-** — Total Frequency Tolerance (±ppm)
- **H** — Temp. Range: H = 25° to 200°C, S = customer specified temp. range

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