

MEMS oscillators ideal for industrial and high-reliability applications



[SiTime Corporation](#) [1] introduced the [SiT8920](#) [2] MEMS oscillator for industrial and high reliability applications. Due to its unique silicon MEMS and analog architecture, the SiT8920 outperforms quartz oscillators in every major performance category. While operating over the widest temperature range, -55°C to +125°C, the SiT8920 consumes half the power of quartz oscillators, is twice as stable, 20 times more reliable and 30 times more robust to shock and vibration. These key benefits dramatically improve system performance and reduce failures in harsh environments.

“SiTime’s MEMS and analog expertise allows us to deliver unique, leadership products with performance that is far beyond what is available in the market today,” said Piyush Sevalia, executive vice president of marketing at SiTime. “The SiT8920 is a win-win for customers developing industrial and high-reliability applications. They benefit from dramatically better robustness and reliability, while simultaneously improving system performance. SiTime’s MEMS oscillators incorporate unique features that are simply not available from quartz products. For example, the SiT8920 incorporates SiTime’s unique SoftEdge rise/fall time control that reduces system EMI without additional components, expensive shielding or PCB re-design. By offering such compelling benefits, SiTime is transforming the timing industry with its silicon MEMS solutions.”

SiTime is also introducing two additional devices that are well suited for replacing quartz oscillators and crystal resonators.

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- [SiT1618](#) [3] – a fixed-frequency oscillator that operates over -40°C to +125°C
- [SiT8918](#) [4] – a programmable oscillator that operates over the same temperature range and supports any frequency between 1 and 110 MHz as well as 1.8V and 2.5 to 3.3V operation

These new [high-temp oscillators](#) [5] offer many unique features and benefits listed below.

- Best robustness: 30 times better than quartz oscillators
 - 0.1 ppb/g vibration sensitivity, the best in the industry
 - 50,000 g shock and 70 g vibration resistance
- Best reliability: 500 million hours MTBF (2 FIT), 20 times better than quartz oscillators
- Best frequency stability: ± 25 PPM over the operating temperature for better system timing
- Low power consumption: < 4 mA typical
- Five industry-standard package options including a tiny 2.0 x 1.6 mm, all of which are drop-in replacements for quartz oscillators

The SiT8920, SiT8918 and the SiT1618 MEMS oscillators are sampling now with mass production scheduled for April 2013. Pricing is available upon request.

Datasheets:

<http://www.sitime.com/products/datasheets/sit8920/SiT8920-datasheet.pdf> [6]

<http://www.sitime.com/products/datasheets/sit1618/SiT1618-datasheet.pdf> [7]

<http://www.sitime.com/products/datasheets/sit8918/SiT8918-datasheet.pdf> [8]

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Links:

[1] <http://www.sitime.com?lf1=595367226f515114499649c306147>

[2] <http://www.sitime.com/products/high-temp-oscillators/sit8920?lf1=385367226c377214499649a5841991>

[3] <http://www.sitime.com/products/high-temp-oscillators/sit1618?lf1=867367226b942514499649a5842071>

[4] <http://www.sitime.com/products/high-temp-oscillators/sit8918?lf1=416367226e381514499649e5842135>

[5] <http://www.sitime.com/products/high-temp-oscillators?lf1=335367226d771114499649b5842235>

[6] <http://www.sitime.com/products/datasheets/sit8920/SiT8920-datasheet.pdf?lf1=784367226a845314499649b5842389>

[7] <http://www.sitime.com/products/datasheets/sit1618/SiT1618-datasheet.pdf?lf1=>

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[8] <http://www.sitime.com/products/datasheets/sit8918/SiT8918-datasheet.pdf?lf1=435367226b694114499649b5842569>