Endura MEMS Timing

For High-Reliability Ruggedized Applications

30,000*g* Shock and 70*g* Vibration Resistance

-55°C to +125°C Operating Temperature Range

1 Billion Hour MTBF

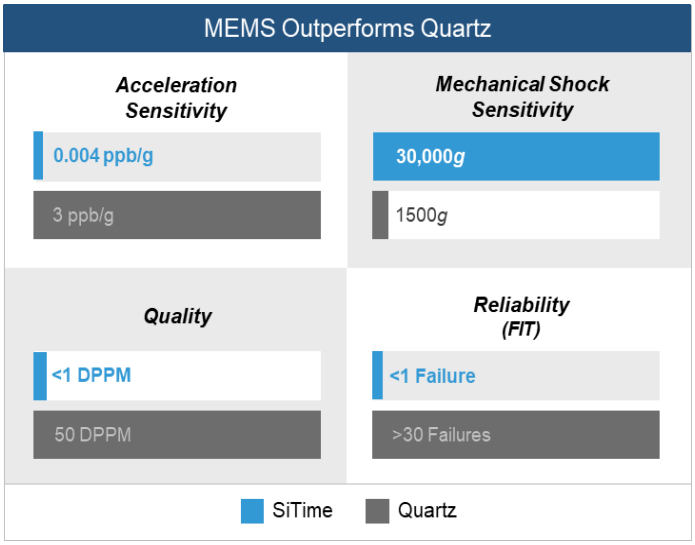
Endura™ MEMS oscillators set new benchmarks in ruggedized performance for aerospace and defense applications. SiTime's revolutionary technology enables robust and durable oscillators, delivering the most stable timing while operating under harsh environmental conditions – airflow, temperature perturbation, mechanical shock, vibration, power supply noise, and electromagnetic interference (EMI).

Benefits

- Accurate timing in extreme environments with better frequency stability over temperature, shock/vibration immunity, and high quality
- Any combination of frequency, stability, and voltage within a wide range ensures optimum operation for each application
- Minimal need for maintenance and calibration due to industry-leading aging and drift

Applications

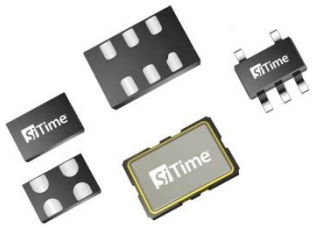
- Command/Control
- Avionics & Drones
- Satellite/GNSS
- Field Communications
- Vehicle Comms/Telemetry
- Ruggedized Applications



Features

Highest robustness and reliability

- 0.004 ppb/*g* acceleration sensitivity
- 30,000g shock, 70*g* vibration resistance
- 1 billion hour MTBF, <1 FIT
- ±500 ppb 20 year aging



Exceptional dynamic stability under airflow

- ±0.9 ppb/°C frequency slope (ΔF/ΔT)
- 1.5e-11 ADEV at τ = 10 seconds, under still air and airflow

Maximum flexibility with factory programmable devices

- 1 to 725 MHz (any frequency)
- ±0.05 ppm to ±50 ppm over temp stability
- -55°C to 125°C maximum operating temperature range
- On-chip regulators eliminate the need for an external LDO

Integrated MEMS resonator, quartz free

- MEMS resonator encapsulated in silicon at 1100°C
- Resonator designed to never age or fatigue
- Ultra-low mass, immune to shock and vibration

Conforms to MIL-PRF-55310 and MIL-STD-883 specifications

Standard and custom up-screening available from SiTime partners

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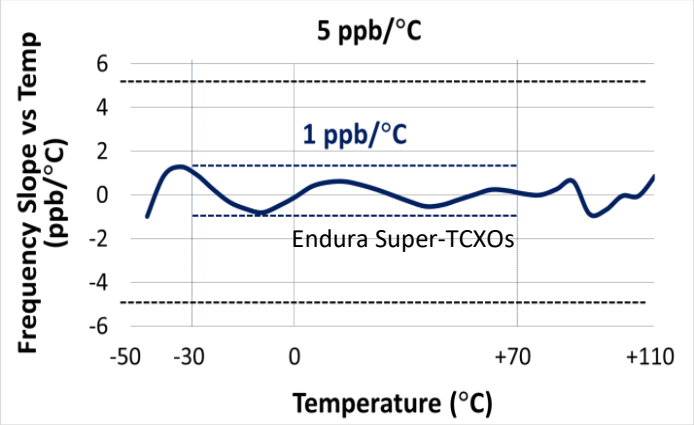
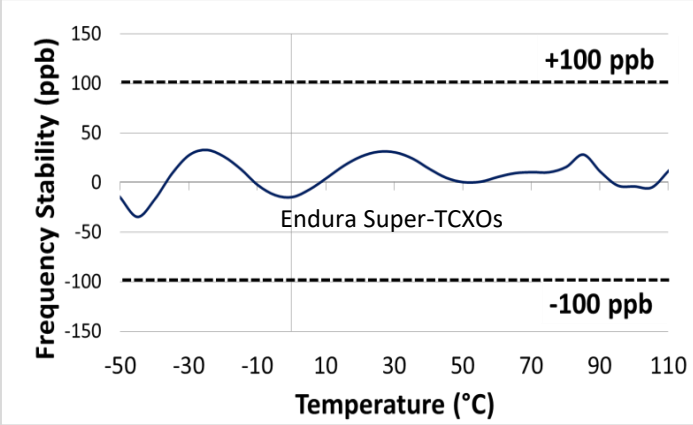
Endura Super-TCXOs Ruggedized Performance





Device Type	Device	Frequency	Temp. Range (°C)	Stability (ppm)	Output Type	Package Size (mm)
Super-TCXOs	SiT5146, SiT5147	1 to 220 MHz	-40 to 10 -40 to 105 0 to 70	±0.5 to ±2.5 ±0.1 to ±0.25 ±0.05	LVCMOS Clipped Sine Wave	5.0 x 3.2
	SiT5346, SiT5347					
	SiT5348, SiT5349					
Differential Oscillators	SiT9346, SiT9347	1 to 725 MHz	-20 to 70 -40 to 85 -40 to 95 -40 to 105	±10 to ± 50	LVPECL LVDS HCSL	3.2 x 2.5 5.0 x 3.2 7.0 x 5.2
Single Ended Oscillators	SiT8944, SiT8945	1 to 137 MHz	-40 to 85 -40 to 105 -40 to 125 -55 to 125	±20 to ±50	LVCMOS	2.0 x 1.6 2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0
	SiT2044, SiT2045					SOT23-5
Spread Spectrum Oscillators	SiT9045	1 to 150 MHz	-40 to 85 -40 to 105 -40 to 125 -55 to 125	±50	LVCMOS	2.0 x 1.6 2.5 x 2.0 3.2 x 2.5
VCXOs	SiT3342, SiT3343	1 to 725 MHz	-20 to 70 -40 to 85 -40 to 95 -40 to 105	±15 to ±50	LVPECL LVDS HCSL	3.2 x 2.5 5.0 x 3.2 7.0 x 5.2
DCXOs	SiT3541, SiT3542	1 to 725 MHz	-20 to 70 -40 to 85	±10 to ±50	LVPECL LVDS HCSL	5.0 x 3.2

SiTime is a market leader in MEMS-based timing solutions. We combine innovative MEMS and programmable analog technologies with our systems expertise to deliver industry-best timing solutions that overcome the limitations of legacy quartz products. Our configurable products provide ultra-stable timing that enables customers to differentiate their systems with higher performance, smaller size, and better reliability.