SiTime

MEMS Timing Solutions for **Aerospace-Defense**

Endura™ Ruggedized Timing Solutions

- Lower acceleration sensitivity
- High shock and vibration survivability
- Better dynamic performance in harsh environments
- Higher reliability
- Up-screening available

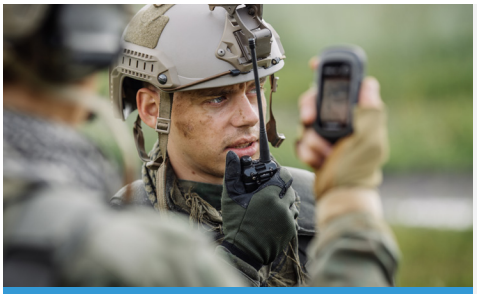
Engineered for the world's toughest applications

AEROSPACE

Super-TCXOs

SiT5146 | SiT5147 | SiT5346 | SiT5347 | SiT5348 | SiT5349

- Precision timing | ±100 ppb up to 105°C
- Vibration resistant | 0.004 ppb/g typical
- Airflow and thermal shock resistant | 1 ppb/°C



FIELD COMMUNICATIONS

Differential Oscillators

SiT9345 | SiT9346 | SiT9347 | SiT3541 | SiT3542 | SiT3342 | SiT3343

- Low jitter | 0.2 ps RMS (12 kHz to 20 MHz)
- Precise frequency steering | digital tuning to ±5 ppt
- Small industry-standard packages | as small as 3.2 x 2.5 mm

PRECISION GNSS TIMING

Super-TCXOs

SiT5346 | SiT5347 | SiT5348 | SiT5349 | SiT5146 | SiT5147

- High temperature operation | ±500 ppb up to 105°C
- Airflow and thermal shock resistant | 1 ppb/°C
- Excellent short term stability | ADEV 1.5e-11 at 10s

AVIONICS

Single Ended Oscillators

SiT8944 | SiT8945 | SiT2044 | SiT2045 | SiT9045

- Vibration resistant | in small industry-standard packages
- Wide operating temperature | -55 to 125°C
- Resistant to changing ambient pressure

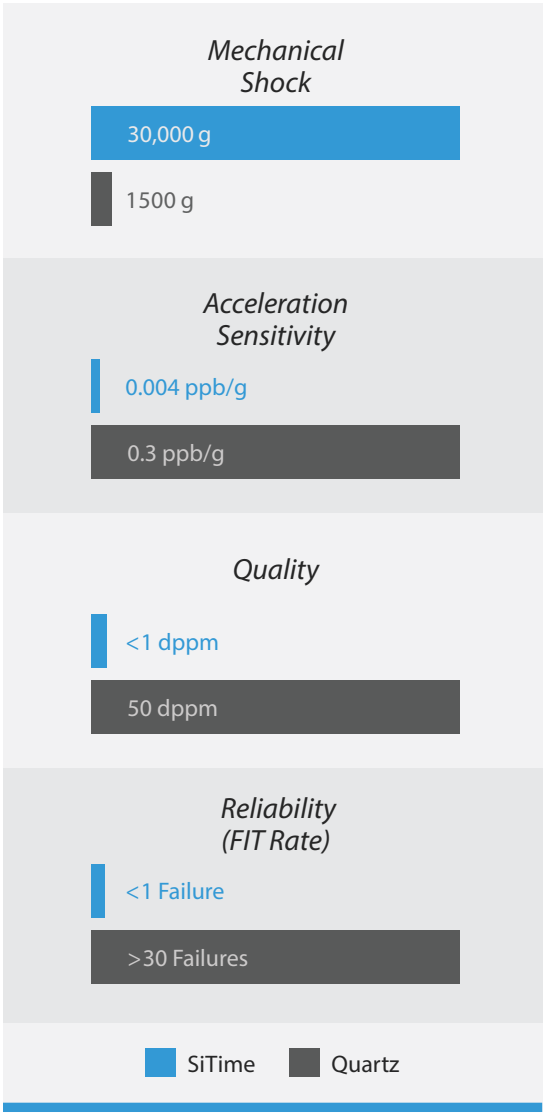
SATCOM

Super-TCXOs

SiT5346 | SiT5347 | SiT5348 | SiT5349

- Best g-sensitivity | 0.004 ppb/g typical
- No activity dips | no micro jumps
- Low Allan deviation | ADEV 1.5e-11 at 10s

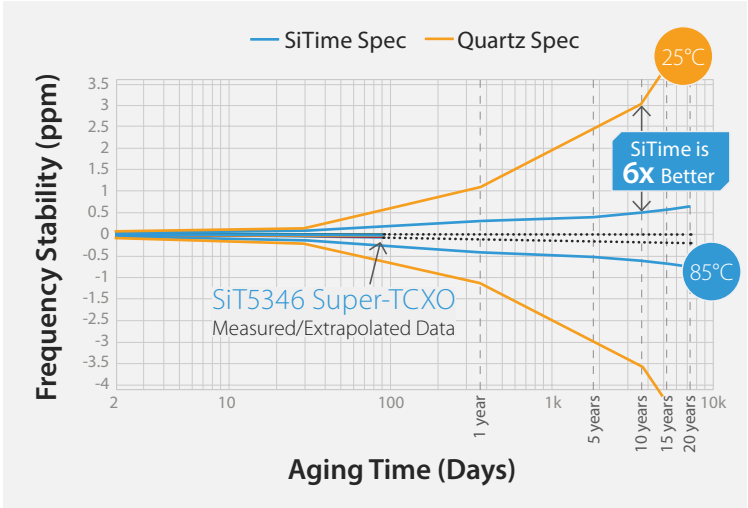
Outperforms Quartz



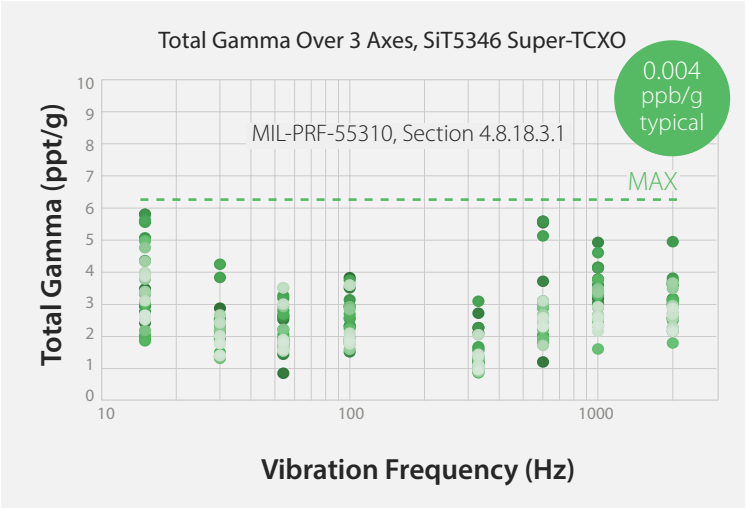
Conforms to MIL Specifications

MIL-PRF-55310	Test	Single-ended XO	Differential XO/ VCXO/DCXO	TCXO
3.6.40.1	Shock	●	●	●
4.8.18.3.1	g-Sensitivity	●	●	●
3.6.34.1	Frequency aging	●	●	●
3.6.17.1	g-sensitivity, constant acceleration	●	●	●
3.6.38.3	Phase noise under vibration	●	●	●
3.6.10.2	Frequency-temperature stability with hysteresis	●	●	●
3.6.45.2	Ambient pressure	●	●	●
3.6.16.5	Allan deviation	n/a	n/a	●
3.6.10.4	Frequency-temperature stability with hysteresis and trim effect	n/a	●	●
3.6.15	Retrace	n/a	n/a	●
3.6.30.7	Modulation frequency response	n/a	●	●
3.6.41.1	Acceleration survivability	●	●	●
3.6.7	Frequency warm up	n/a	n/a	●

Best-in-Class Aging



Lower Acceleration (g) Sensitivity



SiTime

MEMS Timing Solutions for Aerospace & Defense

SiTime Base Part No.	Output Frequency	Frequency Stability (ppm)	Supply Volt. (V)	Supply Current (Typical)	Packages (mm x mm)	Output Logic	Features
TCXOs | ±6.25 to ±3200 ppm pull range | 5 ppt resolution frequency control | Better reliability | 0.004 ppb/g acceleration sensitivity							
SiT5348/49	1 MHz to 220 MHz	±0.05	2.5, 2.8, 3.0, 3.3	40 to 45 mA	5.0 x 3.2 7.0 x 5.0 9.0 x 7.0 14.0 x 9.0	LVCMOS, Clipped Sinewave	I2C programmable, ±1 ppb/°C slope, 0.2 ps/mv PSNR, Field Programmable
SiT5346/47		±0.1, ±0.2, ±0.25					I2C programmable, ±1 ppb/°C slope, 0.2 ps/mv PSNR, -40 to +105°C, Field Programmable
SiT5146/47	1 MHz to 220 MHz	±0.5, ±1, ±2.5					
DIFFERENTIAL LOW-JITTER OSCILLATORS | Better reliability | 0.2 ps/mV power supply noise rejection (PSNR)							
SiT9346/47	1 MHz to 725 MHz	±10, ±20, ±25, ±50	2.5 to 3.3	76 to 84 mA	3.2 x 2.5, 5.0 x 3.2, 7.0 x 5.0	LVPECL, LVDS, HCSL	0.21 ps RMS phase jitter, -40 to +105°C
SINGLE-ENDED OSCILLATORS | Better reliability | Pin-compatible footprints							
SiT8944	1 MHz to 110 MHz	±20, ±25, ±50	1.8, 2.5 to 3.3	3.5 to 4.5 mA	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	LVCMOS	1.3 ps RMS phase jitter, -55 to +125°C, Field Programmable
SiT8945	115 MHz to 137 MHz			4.9 to 6 mA			
SiT9045	1 MHz to 150 MHz	±20, ±25, ±50	1.8, 2.5 to 3.3	6.6 to 8.0 mA	2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5	LVCMOS	40 spread options, up to ±2.0%, down to -4.0%, -55 to +125°C, Smallest, Field Programmable
SiT2044	1 MHz to 110 MHz	±20, ±25, ±30, ±50	1.8, 2.5 to 3.3	3.8 to 4.5 mA	SOT23-5: 2.9 x 2.8	LVCMOS	8 output drive strength options, -55 to +125°C, Field Programmable
SiT2045	115 MHz to 137 MHz			4.9 to 6 mA			
VCXOs | ±25 to ±3200 ppm pull range, <1% linearity | Better reliability							
SiT3342/43	1 MHz to 725 MHz	±15, ±25, ±30, ±50	2.5 to 3.3	76 to 84 mA	3.2 x 2.5, 5.0 x 3.2, 7.0 x 5.0	LVPECL, LVDS, HCSL	0.21 ps RMS phase jitter
DCXOs (In-System Programmable) | Digital pull for lowest noise | Up to ±1600 ppm pull range, 5 ppt pull resolution, <1% linearity							
SiT3541/42	1 MHz to 725 MHz	±20, ±25, ±50	2.5 to 3.3	70 to 82 mA	5.0 x 3.2	LVPECL, LVDS, HCSL	I2C programmable, 0.21 ps RMS phase jitter, -40 to +105°C

Up-screening and Customization Services Available

Custom value-added services include:

- 100% burn-in to screen for infant mortality
- 100% test at extreme temperatures
- Quality conformance inspection (QCI), sample testing for high reliability
- Customer-generated drawings
- Custom test flows

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