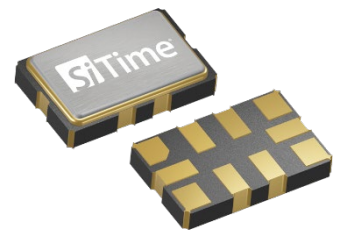


1 to 60 MHz, ± 100 ppb Elite RF™ Super-TCXO



The SiT5376 is a ± 100 ppb precision MEMS Super-TCXO. This device is engineered for an unmatched combination of environmental resilience, low phase noise, low power, and compact size, making it the ideal precision timing choice for RF systems. It is fully compliant to the GR-1244 Stratum 3 oscillator specifications. By leveraging SiTime's unique DualMEMS™ and TurboCompensation™ temperature sensing technology, SiT5376 delivers the most stable timing in the presence of environmental stressors – airflow, temperature perturbation, vibration, shock, and electromagnetic interference (EMI). For the most precise and robust frequency control, the output of SiT5376 can be digitally pulled by up to ± 400 ppm with a resolution of ± 0.05 ppt.

SiT5376 can be factory-programmed to any combination of frequency, voltage, and pull range.



Oscillator Type	TCXO-SE
Frequency	1 to 60 MHz
Frequency Stability (ppm)	± 0.1 , ± 0.2 , ± 0.25
Phase Jitter (rms)	100 fs
Output Type	LVC MOS, Clipped Sinewave
Operating Temperature Range (°C)	-20 to 70, -40 to +85, -40 to +105
Pull Range (ppm)	± 3.125 , ± 6.25 , ± 10 , ± 12.5 , ± 25 , ± 50 , ± 100 , ± 200 , ± 400
Voltage Supply (V)	1.8, 2.5, 2.8, 3.0, 3.3
Package Type (mm²)	5.0 x 3.5 10-pin
Features	Low-phase-noise, precision TCXO with digital control
Availability	Pre-production Sampling

Features:

Up to 60 MHz output frequency

- Eliminates need for frequency multipliers

Exceptional dynamic stability under airflow, fast temp. ramp

- ± 100 ppb over-temp. stability from -40 to 105°C
- $8\text{e-}12$ ADEV at 10 second average time
- ± 0.9 ppb/ $^{\circ}\text{C}$ frequency slope ($\Delta F/\Delta T$), $1^{\circ}\text{C}/\text{min.}$ ramp
 - Ensures system level quality of service for telecom and networking equipment in hostile environments

RF-grade phase noise, 20x better under vibration

- -159 dBc/Hz at 10 kHz offset (19.2 MHz nominal)
- Minimizes call and/or link drops in high-vibration environments

No activity dips or microjumps

- Eliminates any need for costly screening or burn-in tests

0.2 ps/mV power supply noise rejection (PSNR)

- Reduces BOM by eliminating a dedicated LDO for TCXO

LVC MOS or Clipped sinewave output

- Optimizes for best balance between EMI and jitter

Rich programmable features

- Any frequency between 1 to 60 MHz
- 1.8 to 3.3 V
- Large pull range from ± 3.125 to ± 400 ppm:
 - Customize TCXO specifications for optimal system performance

Digital frequency tuning through I2C or SPI

- Eliminate frequency shift caused by board noise

Superior reliability

- 1 billion hours MTBF
- Lifetime Warranty: Reduces repair costs and field failures due to clock components

Applications:

- Wireless equipment
- RF signal chain
- 4G/5G RRH, DU
- Small cells
- Microwave backhaul
- Jitter cleaner
- Satellite base station
- GPS/GNSS modules
- Radar
- IEEE 1588 boundary clocks and grandmasters
- Fiber, cable, DSL
- Instrumentation
- Test and measurement