SiTime

Timing Solutions for

MOBILE, IOT & CONSUMER

Extensive portfolio

Enables longer battery life

Ultra-small footprint

Better performance and higher stability in harsh environments

Programmable, instant samples, shorter lead time

A small part from SiTime runs a big part of your world

Ultra Stable Oscillators, TCXOs and DCXOs

Precision Timing uniquely enables electronics products that are smarter, faster, more reliable, smaller and lower power. SiTime MEMS-based oscillators for Mobile, IoT and Consumer markets are optimized for small size and low power while also providing excellent stability over temperature and in response to harsh environments including stress, vibration and rapid temperature changes often found in tightly confined devices such as wearables. These products offer excellent jitter performance and are designed to minimize EMI while driving multiple loads.

Application Circuits

Local oscillator

Reference clock

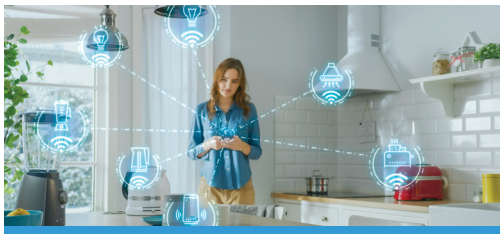
Sleep clock

GNSS holdover

Dynamic frequency tuning (DCXO)

SMARTPHONE & MOBILE ACCESSORIES

SMART WATCH / FITNESS TRACKER



SMART HOME

STYLUS & TABLET

SMART GLASSES / AR / VR

MEDICAL WEARABLES / INPLANTABLES

SCREENLESS AI ASSISTANTS

Size

- Smallest 32 kHz footprint in a 1.5 x 0.8 mm CSP; 80% smaller than quartz
- Oscillator output drives multiple loads and reduces component count

System performance

- Ultra stable over wide temperature ranges (down to ±3 ppm)
- Ultra-low power < 1 uA for 32 kHz
- Ultra-low RMS Period Jitter
- Wide range from 1 Hz to 125 MHz
- Programmable frequency eliminates NRE for custom parts

Power

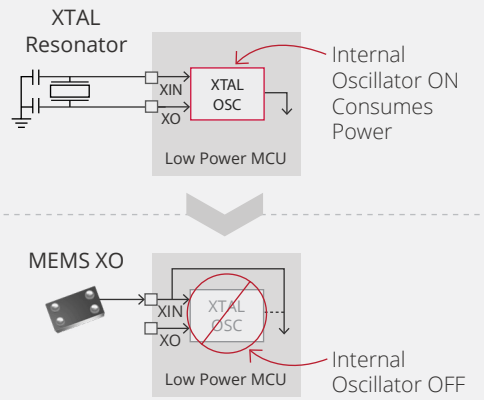
- XO as low as 510 nA with ±20 ppm (32 kHz)
- TCXO as low as 0.99 uA at ±5 ppm (32 kHz)
- 1.2 V to 3.63 V supported (product dependent)

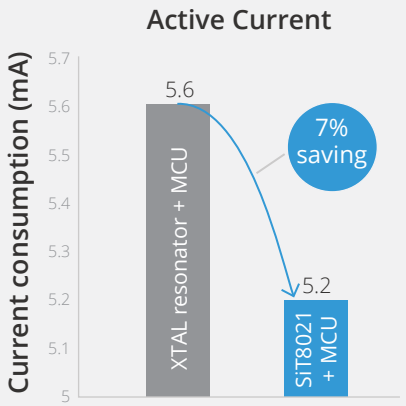
MEMS Timing Outperforms Quartz

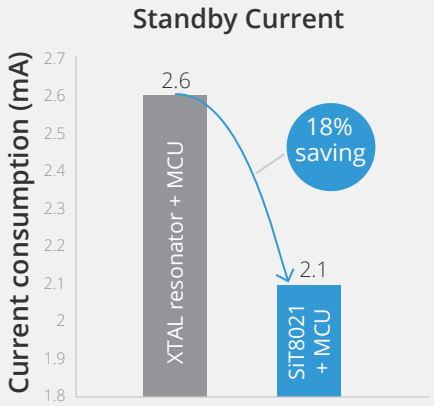
Lower Power

Replace a quartz resonator with MEMS oscillator to save up to 20% system power

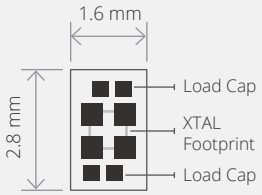
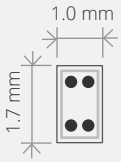
*All values are measured



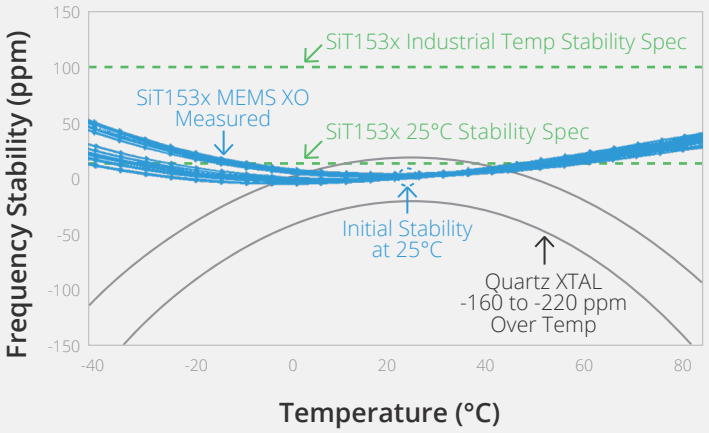




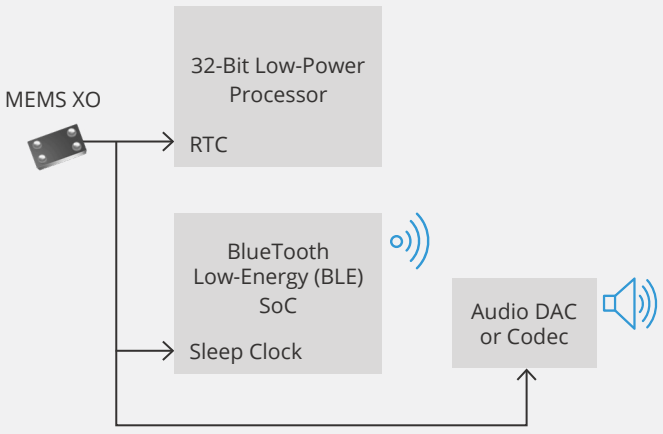
Smallest Size, Lower BOM

Typical Resonator	SiTime MEMS Oscillator
	
1.6 mm, 2.8 mm, Load Cap, XTAL Footprint, Load Cap	1.0 mm, 1.7 mm
1.2 x 1.0 XTAL plus two 0201 load caps & retreat	1.5 x 0.8 mm SiTime XO plus 0.1 mm retreat, No load caps required
4.5 mm² Total Footprint	**1.7 mm² Total Footprint**

Best 32 kHz Stability

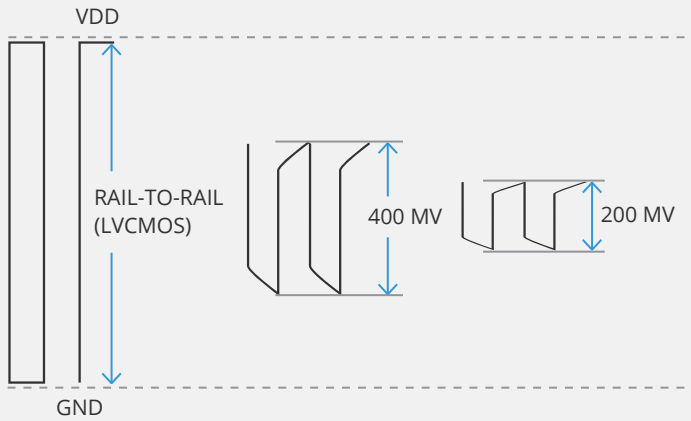


Drive Multiple Loads



Low Power Feature

NanoDrive™ optimizes output swing and lowers power



MEMS Timing Solutions for Mobile, IoT and Consumer

SiTime Base Part No.	Output Frequency	Frequency Stability (ppm)	Supply Volt. (V)	Supply Current (Typical)	RMS Period Jitter	Packages (mm x mm)	Output Logic	Features
µPOWER 32 kHz OSCILLATORS | Replace quartz XTAL/XO | Smallest size | Drive multiple loads | Higher accuracy | Better reliability								
SiT1811	32.768 kHz	±20	1.35 to 1.98	510 nA	2.5 ns	1211	LVCMOS	Ultra-low power
SiT1532	32.768 kHz	75, 100, 250 over temp (10, 20 room temp)	1.2 to 3.63	0.90 µA	35 ns	1508	NanoDrive, LVCMOS	Low voltage, XTAL replacement
SiT1533	32.768 kHz	75, 100, 250 over temp (10, 20 room temp)	1.2 to 3.63	0.90 µA	35 ns	2012	NanoDrive, LVCMOS	Low voltage, XTAL replacement
SiT1573	32.768 kHz	±100	1.62 to 3.63	4.0 µA	30 ns	1508	LVCMOS	Small size
SiT1581	1 Hz to 2.5 MHz	±50	1.62 to 3.63	4.5 µA	2.5 ns	1508	LVCMOS	Immune to small-molecule gasses
SiT1630	32.768, 16.384 kHz	75, 100, 150 over temp (20 room temp)	1.5 to 3.63	1.0 µA	35 ns	2012, SOT23-5	LVCMOS	-40 to +105°C
µPOWER MHz OSCILLATORS | Smallest size | Lower power | Drive two or more loads | Higher accuracy | Programmable for design flexibility								
SiT1534	1 Hz to 32.768 kHz	75, 100, 250 over temp (20 room temp)	1.2 to 3.63	0.90 µA (32 kHz)	35 ns (32 KHz)	1508, 2012	NanoDrive, LVCMOS	Low power
SiT1569	1 Hz to 462.5 kHz	±50	1.62 to 3.63	3.3 µA (100 kHz)	4 ns (100 KHz)	1508	LVCMOS	Low jitter
SiT1579	1 Hz to 2.5 MHz	±50	1.62 to 3.63	6.0 µA (100 kHz)	2.2 ns (100 KHz)	1508	LVCMOS	Low jitter
SiT1581	1 Hz to 2.5 MHz	±50	1.62 to 3.63	6.0 µA (100 kHz)	2.5 ns (32 KHz)	1508	LVCMOS	Immune to small-molecule gasses
SiT8021	1 MHz to 26 MHz	±50, ±100	1.8, 2.5 to 3.3	60 to 280 µA (0.7 µA stby)	75 ps (6.144 MHz)	1508	LVCMOS	Ultra-low power
SiT3901	2.6, 6.78, 13.56 MHz	±50, ±100	1.8, 2.5 to 3.3	105 µA (2.6 MHz), 220 µA (6.78 MHz)	80 ps (6.78 MHz)	1508	LVCMOS	Digitally Controlled Oscillator
SiT1605 SiT1615	4 MHz to 125 MHz	±25, ±30, ±50	1.14 to 3.63	2.5 mA (27 MHz)	1 ps (27 MHz)	1612, 2016, 2520, 3225	LVCMOS	Immune to small-molecule gasses
SiT8008	1 MHz to 110 MHz	±20, ±25, ±50	1.62 to 3.63	3.7 mA (20 MHz)	1.8 ps (75 MHz)	2016, 2520, 3225,5032,7050	LVCMOS	Field programmable
µPOWER 32 kHz TCXOs | Replace quartz XTAL/TCXO | Smallest size | Drive two or more loads | Higher accuracy | Better reliability								
SiT1552 TCXO	32.768 kHz	±10, ±13, ±22, all-inclusive	1.5 to 3.63	0.99 µA	35 ns	1508	NanoDrive, LVCMOS	Low power
SiT1566 Super-TCXO	32.768 kHz	±3, ±5, all-inclusive (after overmold/underfills)	1.62 to 3.63	4.5 µA	2.5 ns	1508	LVCMOS	Low jitter
SiT1568 Super-TCXO	32.768 kHz	±5 all-inclusive (after overmold/underfill)	1.62 to 1.98	4.5 µA	2.5 ns	1508	LVCMOS	Auto-cal
SiT1580 TCXO	32.768 kHz	±5 all-inclusive (after overmold/underfill)	1.62 to 1.98	4.5 µA	2.5 ns	1508	LVCMOS	Immune to small-molecule gasses
µPOWER MHz TCXOs | Smallest size | Lower power | Drive two or more loads | Higher accuracy | Programmable for design flexibility								
SiT1576 Super-TCXO	1 Hz to 2.5 MHz	±5, ±20 all inclusive	1.62 to 3.63	6.0 µA (100 kHz)	2.2 ns (100 kHz)	1508	LVCMOS	Low jitter

Learn more about timing solutions from SiTime

Buy at www.SiTimeDirect.com

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All products are available in -40 to +85°C unless otherwise noted.