



MOBILE



CONSUMER



CLOUD-BIG DATA



DATA-COM-
INFRASTRUCTURE



INDUSTRIAL



AUTOMOTIVE

- Drop-in replacement for quartz
- Smallest size
- 2 to 4 week production lead-time
- 1 Hz to 625 MHz frequency range
- ± 1.5 PPM
- -55 to +125°C operating temperature
- 0.3 ps_{rms} jitter
- AEC-Q100
- 20x more reliable



INSTANT
SAMPLES



GREEN
SOLUTIONS



LIFETIME
WARRANTY

MEMS Oscillators and Clock Generators

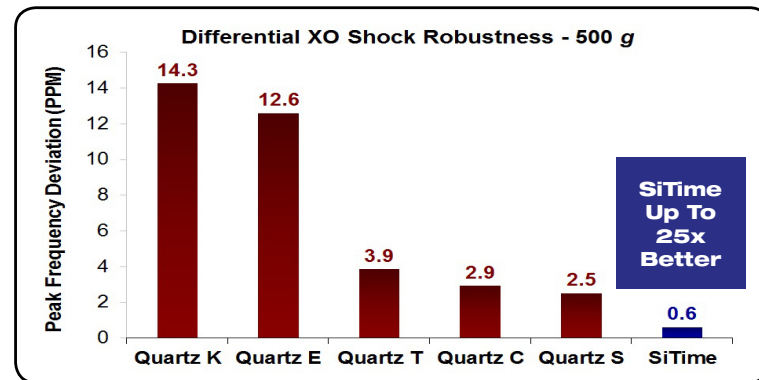
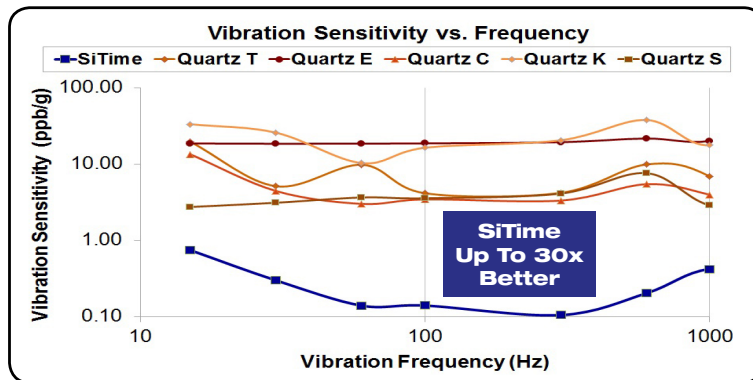
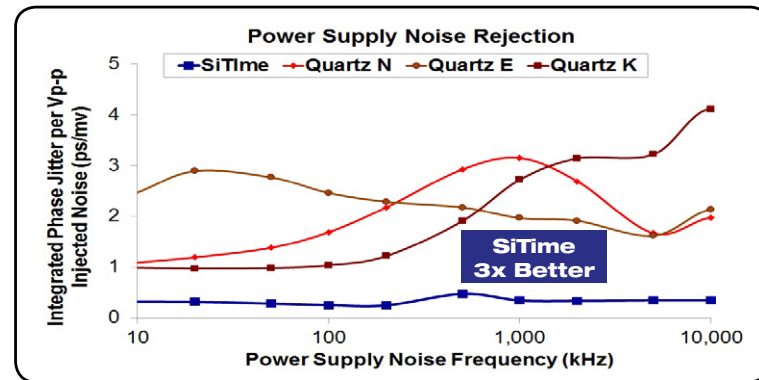
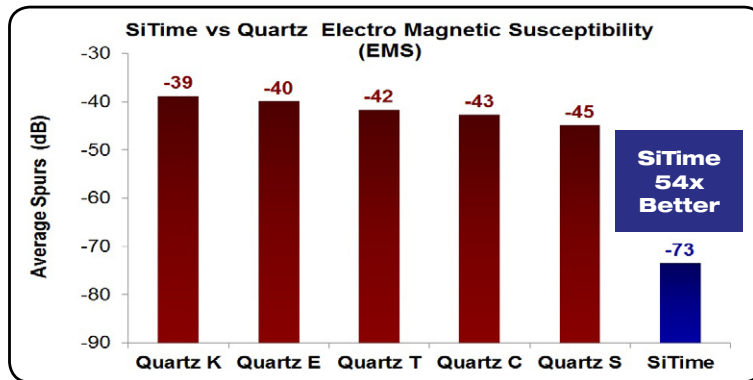
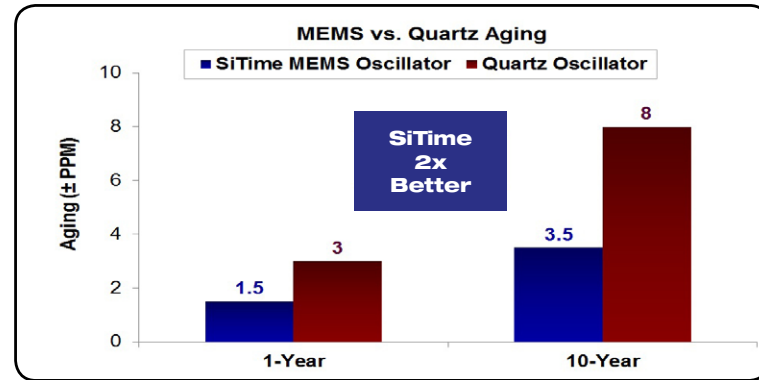
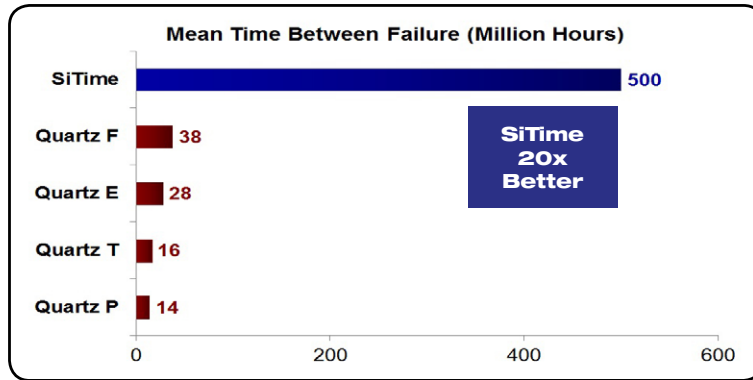
Product Portfolio

32 kHz XO and XTAL Replacement	32 kHz TCXO	Ultra-Performance XO	Low Power XO	+125°C High Temp XO	AEC-Q100 Automotive Clocks	VCXO	(VC) TCXO	Spread Spectrum XO	DCXO	Clock Generator
SiT1532 32.768 kHz 1508 CSP 1.2 to 3.63V	SiT1552 32.768 kHz 1.5 to 3.63V	SiT8208/9 1-220 MHz	SiT1602 3.75-75 MHz	SiT1618 7.3728-48 MHz -40 to +125°C	SiT8924 1-110 MHz -40 to +125°C	SiT3807 1.5-45 MHz	SiT5000 10-45 MHz ±1.5 to 5 PPM	SiT9001 1-200 MHz	SiT3907 1-220 MHz	SiT9201 1-110 MHz
SiT1533 32.768 kHz 2012 SMD 1.2 to 3.63V	SiT1553 32.768 kHz 2.7 to 4.5V	SiT8225 25 MHz 1/10 GbE	SiT8008/9 1-137 MHz 3.5-7 mA	SiT8918/9 1-137 MHz -40 to +125°C	SiT8925 115.20-137 MHz -40 to +125°C	SiT3808/9 1-220 MHz	SiT5001/2 1-220 MHz ±1.5 to 5 PPM	SiT9003 Low Power 1-110 MHz	SiT3921/2 1-625 MHz	SiT2002 115-137 MHz
SiT1534 1 Hz-32.768 kHz 1.2 to 3.63V		SiT8256 156.25 MHz 1/10 GbE	SiT8003XT 0.25mm thin 1-110 MHz	SiT8920/1 1-137 MHz -55 to +125°C	SiT2024/5 1-137 MHz -40 to +125°C SOT23-5	SiT3821/2 1-625 MHz	SiT5021/2 1-625 MHz ±2.5 to 5 PPM	SiT9002 1-220 MHz	SiT3509 1-220 MHz 9 selectable frequencies	High Temp Clock Generator SiT2018/9 1-137 MHz -40 to +125°C
SiT1542 32.768 kHz 1508 CSP 2.7 to 4.5V		SiT9120 25-212.5 MHz								SiT2020/1 1-137 MHz -55 to +125°C
SiT1543 32.768 kHz 2012 SMD 2.7 to 4.5V		SiT9121/2 1-625 MHz							SiT3519 1-220 MHz 9 selectable frequencies	
SiT1544 1 Hz-32.768 kHz 2.7 to 4.5V		SiT9156 156.25 MHz 10/40 GbE								
SiT1630 32.768 kHz Oscillator										

- NanoDrive™ output for lowest power
- LVCMOS output
- LVDS/LVPECL output
- Available as field programmable for use with Time Machine II Programmer
- Pin-to-pin compatible with quartz devices

MEMS Oscillators Outperform Quartz

Learn about the resilience and reliability of SiTime oscillators at www.sitime.com/support/application-notes.



	Target Markets	Devices ^{1,2}	Key Features	Output Frequency ³ (MHz)	Frequency Stability (PPM)	Output Logic	Supply Current (mA Typ)	Packages (mm x mm)	Additional Features and Options			
									Rise/Fall Time Control	Output Enable	Standby	Field Programmable ⁴
Oscillators	Low-Jitter Oscillators - XO											
	Networking, Telecom, Server and Storage	SiT8208	<ul style="list-style-type: none"> Low phase jitter: 0.6 ps_{rms} Best frequency stability 	1 to 80	±10, ±20, ±25, ±50	LVCMOS LVTTTL	29 10 µA (Stby)	2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	✓	✓	✓
		SiT8209		80 to 220					✓	✓	✓	✓
		SiT8225	<ul style="list-style-type: none"> Lowest phase jitter: 0.3 ps_{rms} Best frequency stability Positive frequency shift 	25 to 25.0012 (std. freq.)	±10, ±20, ±25, ±50	LVCMOS LVTTTL	29 10 µA (Stby)	2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	✓	✓	✓
		SiT8256		156.25 to 156.261718 (std. freq.)					✓	✓	✓	✓
	Differential Low Jitter Oscillators - XO											
	Networking, Telecom, Server, Storage, 10G, Fibre Channel, GigE, PCIe	SiT9120	<ul style="list-style-type: none"> Low phase jitter: 0.6 ps_{rms} Best frequency stability 	25 to 212.5 (std. freq.)	±10, ±25, ±50	LVPECL, LVDS	55 to 69	3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	✓	✓	✓
		SiT9121		1 to 220					±10, ±20, ±25, ±50	✓	✓	✓
		SiT9122	220 to 625	✓	✓					✓	✓	
		SiT9156	<ul style="list-style-type: none"> Lowest phase jitter: 0.3 ps_{rms} Best frequency stability For 1/10 GbE applications Positive frequency shift 	156.25 to 161.1328 (std. freq.)	±10, ±25, ±50				5.0 x 3.2 7.0 x 5.0	✓	✓	-
	Low Power Oscillators - XO											
	NEW!	Portable, Handheld Consumer and Computing	SiT1602	<ul style="list-style-type: none"> Low power Most cost effective XO Continuous voltage option Ultra small footprint 	3.57 to 77.76 (std. freq.)	±20, ±25, ±50	LVCMOS LVTTTL	3.4 0.6 µA (Stby)	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	✓	✓	✓
NEW!	Computing, Consumer, Industrial	SiT8008	<ul style="list-style-type: none"> General purpose low power Continuous voltage option Ultra small footprint 	1 to 110	±20, ±25, ±50	LVCMOS LVTTTL	3.4 0.6 µA (Stby)	✓		✓	✓	✓
		SiT8009	<ul style="list-style-type: none"> High frequency low power Continuous voltage option 	115 to 137	±20, ±25, ±50	LVCMOS LVTTTL	5.5 1 µA (Stby)	✓		✓	✓	✓
Spread-Spectrum Oscillators - SSXO												
SSXOs	Spread Spectrum for General Computing, Memory, µC, Portable and Handheld	SiT9001	<ul style="list-style-type: none"> Up to ±0.25 to ±1.0% center spread and -0.5 to -2.0% down spread modulation 	1 to 200	±50, ±100	LVCMOS LVTTTL	20 30 µA (Stby)	2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	✓	✓	✓
		SiT9003		1 to 110			3.7 1.2 µA (Stby)					
Differential Spread-Spectrum Oscillators - SSXO												
	Computing, Servers with Low EMI	SiT9002	<ul style="list-style-type: none"> ±0.25 to ±1.0% center spread and -0.5 to -4.0% down spread modulation 	1 to 220	±25, ±50	LVPECL, LVDS, HCSL, CML	48 to 75	5.0 x 3.2 7.0 x 5.0	✓	✓	✓	✓

Note 1: Available in Ext. Commercial (-20 to +70°C) or Industrial (-40 to +85°C) temp range.

Note 2: Single-ended devices available with supply voltages of 1.8V, programmable from 2.5 to 3.3V. Differential devices available with programmable supply voltages from 2.5 to 3.3V.

Note 3: All devices have programmable frequency with 6 decimals of accuracy unless noted as "std. freq." (standard frequencies).

Note 4: Field Programmable devices are available for use with the SiTime Time Machine II MEMS Oscillator Programmer.



LIFETIME WARRANTY



Automotive & High-Temp Oscillators	Target Markets	Devices ¹	Key Features	Output Frequency ² (MHz)	Frequency Stability (PPM)	Output Logic	Supply Current (mA Typ)	Packages (mm x mm)	Additional Features and Options			
									Rise/Fall Time Control	Output Enable	Standby	Field Programmable ³
High Temperature Oscillators - XO												
NEW! Industrial, Medical, Automotive	SiT1618	<ul style="list-style-type: none"> High temperature (-40 to +125°C) Widest frequency range Ultra small footprint 0.1 PPB/G vibration sensitivity 	7.3728 to 48 (std. freq.)	±20, ±25, ±30, ±50	LVCMOS LVTTTL	3.6 1 µA (Stby)	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	✓	✓	✓	✓	
	SiT8918		1 to 110			3.6 1 µA (Stby)						
	SiT8919		115.20 to 137			5.4 1 µA (Stby)						
NEW! Extreme Temperature, Ruggedized Equipment	SiT8920	<ul style="list-style-type: none"> High temperature (-55 to +125°C) Widest frequency range Ultra small footprint 0.1 PPB/G vibration sensitivity 	1 to 110	±20, ±25, ±30, ±50	LVCMOS LVTTTL	3.6 1 µA (Stby)	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	✓	✓	✓	✓	
	SiT8921		115.20 to 137			5.4 1 µA (Stby)						
Automotive Oscillators - XO												
NEW! Automotive	SiT8924	<ul style="list-style-type: none"> AEC-Q100 Grade 1 (-40 to +125°C) Widest frequency range 0.1 PPB/G vibration sensitivity Rise/fall time control for EMI reduction 	1 to 110	±20, ±25, ±30, ±50	LVCMOS LVTTTL	3.6	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	✓	✓	-	-	
	SiT8925		115.20 to 137			5.4						

Automotive & High-Temp Clock Gen	Target Markets	Devices ¹	Key Features	Output Frequency ² (MHz)	Frequency Stability (PPM)	Number of Output Channels	Supply Current (mA Typ)	Packages (mm x mm)	Additional Features and Options			
									Rise/Fall Time Control	Output Enable	Standby	Field Programmable ³
High Temperature Clock Generators												
NEW! Industrial, Medical and High Temp Applications	SiT2018	<ul style="list-style-type: none"> Wide temp. range (-40 to +125°C) Best board level reliability 0.1 PPB/G vibration sensitivity Continuous voltage option 	1 to 110	±20, ±25, ±30, ±50	1 LVCMOS	3.6 1 µA (Stby)	2.9 x 2.8 SOT23-5	✓	✓	✓	-	
	SiT2019		115.20 to 137			5.4 1 µA (Stby)						
NEW! Extreme Temperature, Ruggedized Equipment	SiT2020	<ul style="list-style-type: none"> Widest temp. range (-55 to +125°C) Best board level reliability 0.1 PPB/G vibration sensitivity Continuous voltage option 	1 to 110	±20, ±25, ±30, ±50	1 LVCMOS	3.6 1 µA (Stby)	2.9 x 2.8 SOT23-5	✓	✓	✓	-	
	SiT2021		115.20 to 137			5.4 1 µA (Stby)						
Automotive Clock Generators												
NEW! Automotive	SiT2024	<ul style="list-style-type: none"> AEC-Q100 Grade 1 (-40 to +125°C) Best board level reliability 0.1 PPB/G vibration sensitivity Rise/fall time control for EMI reduction 	1 to 110	±20, ±25, ±30, ±50	1 LVCMOS	3.6	2.9 x 2.8 SOT23-5	✓	✓	-	-	
	SiT2025		115.20 to 137			5.4						



Note 1: Available with supply voltages of 1.8V, programmable from 2.5 to 3.3V.
 Note 2: All devices have programmable frequency with 6 decimals of accuracy unless noted as "std. freq." (standard frequencies).
 Note 3: Field Programmable devices are available for use with the SiTime Time Machine II MEMS Oscillator Programmer.



	Target Markets	Devices ¹	Key Features	Output Frequency	Room Temp Frequency (PPM)	Over Temp Frequency (PPM)	Supply Current (μ A Typ)	Supply Voltage (V)	Packages (mm x mm)	Output	
										NanoDrive (V)	LVC MOS (V)
1 Hz to 32 kHz	1 Hz to 32 kHz Oscillators for XTAL Replacement										
	NEW! Smartphones, Tablets and e-Readers, Health and Wellness Monitors, Sport Fitness Watches, Wireless Keypads and Mouse Devices	SiT1532	<ul style="list-style-type: none"> World's smallest 32kHz XO 1.2mm² smallest footprint <1μA ultra-low power 2x better stability than quartz XTAL compatible interface Factory programmable NanoDrive output for lowest power Low voltage SiT153x for unregulated power supplies and high voltage SiT154x for unregulated battery supplies 	32.768 kHz	\pm 20	\pm 75 (Comm) \pm 100 (Ind)	0.9	1.2 to 3.63	1.5 x 0.8 CSP	0.2 to 1.2	<input checked="" type="checkbox"/>
		SiT1533		32.768 kHz					2.0 x 1.2 SMD		
		SiT1534		1 Hz to 32.768 kHz					1.5 x 0.8 CSP 2.0 x 1.2		
		Q1+4 SiT1542		32.768 kHz					1.5 x 0.8 CSP		
		Q1+4 SiT1543		32.768 kHz					2.0 x 1.2 SMD		
		Q1+4 SiT1544		1 Hz to 32.768 kHz					1.5 x 0.8 CSP		
32 kHz Oscillators											
NEW! Portable Electronics, Laptops, Tablets, Industrial and High-Reliability Applications, Portable Medical	SiT1630	<ul style="list-style-type: none"> Smallest XO package 1.1 μA (typ) ultra-low power 	32.768 kHz	\pm 20	\pm 75 (Comm) \pm 100 (Ind)	1.1	1.5 to 3.63	2.0 x 1.2 SMD	-	<input checked="" type="checkbox"/>	
32 kHz Temperature-Compensated Oscillators - TCXO											
NEW! Smart Meters, Health-Wellness Monitors, Precision RTC Reference Clock, Low Power Connectivity	SiT1552 Q1+4 SiT1553	<ul style="list-style-type: none"> 3 PPM over temp stability 2.5 PPM max 10-year aging World's 1st 32 kHz TCXO in CSP <1μA ultra-low power XTAL compatible interface Factory programmable NanoDrive output for lowest power 	32.768 kHz	-	\pm 3, \pm 5, \pm 10, \pm 20	0.9	1.5 to 3.63 2.7 to 4.5	1.5 x 0.8 CSP 2.0 x 1.2 SMD SOT23-5 ²	0.2 to 1.2	<input checked="" type="checkbox"/>	

	Target Markets	Devices ^{3,4}	Key Features	Output Frequency ⁵ (MHz)	Frequency Stability (PPM)	Number of Output Channels	Supply Current (mA Typ)	Packages (mm x mm)	Additional Features and Options		
									Rise/Fall Time Control	Output Enable	Standby
Clock Gen	Clock Generator										
	NEW! Consumer, Networking Industrial	SiT9201 SiT2002	<ul style="list-style-type: none"> Most cost effective Integrated resonator, no need for external XTAL/CLKIN Low power 	1 to 110 115 to 137	\pm 20, \pm 25, \pm 50	1 LVC MOS	3.6 5.4	SOT23-5 2.9 x 2.8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Note 1: Available in Ext. Commercial (-10 to +70°C) or Industrial (-40 to +85°C) temperature range.

Note 2: Contact factory for SOT23-5 availability.

Note 3: Available in Ext. Commercial (-20 to +70°C) or Industrial (-40 to +85°C) temperature range.

Note 4: Available with supply voltages of 1.8V, programmable from 2.5 to 3.3V.

Note 5: Clock generators have programmable frequency with 6 decimals of accuracy.



LIFETIME WARRANTY

SiTimeTM

	Target Markets	Devices ^{1,2}	Key Features	Output Frequency ³ (MHz)	Frequency Stability (PPM)	Output Logic	Supply Current (mA Typ)	Packages (mm x mm)	Additional Features and Options			
									Rise/Fall Time Control	Output Enable	Standby	Field Programmable ⁴
VCXOs	Temperature-Compensated Oscillators - (VC)TCXO											
	Networking, Telecom, Server and Storage, Wireless, GPS, Satellite, ATE, Broadcast Video, Base Stations, Media Gateways, 3G/4G USB Cards	SiT5000	• Fixed frequency for lowest price • ±12.5 pull-range	10 to 40 (std. freq.)	±1.5, ±2, ±2.5, ±5	LVCMOS LVTTTL	32 10 µA (Stby)	2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	✓	✓	-
		SiT5001	• Wide pull-range ±12.5 to ±50 PPM	1 to 80	±1.5, ±2, ±2.5, ±5							
		SiT5002	• Low Phase Jitter: 0.6 ps _{rms}	80 to 220	±1.5, ±2, ±2.5, ±5							
	Differential Temperature-Compensated Oscillators - (VC)TCXO											
	NEW! Networking, GPS, Telecom, Server, ATE, Satellite, Broadcast Video, Wireless, Base Stations	SiT5021	• Wide pull-range ±12.5 to ±50 PPM	1 to 220	±2.5, ±5	LVPECL LVDS	55 to 69	3.2 x 3.2 5.0 x 3.2 7.0 x 5.0	✓	✓	-	-
SiT5022		• Low Phase Jitter: 0.6 ps _{rms}	220 to 625									
VCXOs	Voltage-Controlled Oscillators - VCXO											
	Networking, Telecom, Medical, ATE, Video, xDSL, Embedded Systems	SiT3807	• Fixed frequency for lowest price • Pull-range from ±50 to ±200 PPM • 1% pull-range linearity	1,544 to 49.152 (std. freq.)	±25, ±50	LVCMOS LVTTTL	32 10 µA (Stby)	2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	✓	✓	✓
		SiT3808	• Widest pull-range ±25 to ±1600 PPM	1 to 80	±10, ±25, ±50							
		SiT3809	• 1% pull-range linearity	80 to 220	±10, ±25, ±50							
	Differential Voltage-Controlled Oscillators - VCXO											
	Networking, Telecom, Medical, ATE, Video, xDSL, Embedded Systems	SiT3821	• Best stability	1 to 220	±10, ±25, ±50	LVPECL LVDS	55 to 69	5.0 x 3.2 7.0 x 5.0	✓	✓	-	✓
SiT3822		• Widest pull-range ±25 to ±1600 PPM • 1% pull-range linearity	220 to 625									
DCXOs	Digitally-Controlled Oscillators - DCXO											
	Networking and Telecom	SiT3907	• Single-pin, serial programmable	1 to 220	±10, ±25, ±50	LVCMOS LVTTTL	32	3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	✓	-	-
			• Widest pull-range ±25 to ±1600 PPM • 0.1% pull-range linearity									
	Differential Digitally-Controlled Oscillators - DCXO											
Networking and Telecom	SiT3921	• Single-pin, serial programmable	1 to 220	±10, ±25, ±50	LVPECL LVDS	55 to 69	5.0 x 3.2 7.0 x 5.0	✓	✓	-	-	
	SiT3922	• Widest pull-range ±25 to ±1600 PPM • 0.1% pull-range linearity	220 to 625									
SCXOs	Serially-Configured Oscillators - SCXO											
	NEW! Consumer	SiT3509	• 9 user selectable output frequencies • Serially programmable thru single pin	1 to 220	±25, ±50	LVCMOS LVTTTL	30	2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	-	-	-
	Serially-Configured Digitally-Controlled Oscillators - SCDCXO											
NEW! Consumer	SiT3519	• 9 user selectable output frequencies • Serially programmable thru single pin • Digitally controlled pull range to ±1600 PPM	1 to 220	±25, ±50	LVCMOS LVTTTL	30	2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0	✓	-	-	-	



Note 1: Available in Ext. Commercial (-20 to +70°C) or Industrial (-40 to +85°C) temperature range.
 Note 2: Single-ended devices available with supply voltages of 1.8V, programmable from 2.5 to 3.3V. Differential devices available with programmable supply voltages from 2.5 to 3.3V.
 Note 3: All devices have programmable frequency with 6 decimals of accuracy unless noted as "std. freq." (standard frequencies).
 Note 4: Field Programmable devices are available for use with the SiTime Time Machine II MEMS Oscillator Programmer.



Instant Oscillators

Complete easy-to-use programming kit for SiTime's field programmable oscillators

- Any Frequency
- Any Voltage
- Any Stability



Configure Devices to Your Exact Specification

Customizable Frequency	1 to 625 MHz, 6 decimals of accuracy
Frequency Stability	±20 to ±50 PPM
Supply Voltage	1.8V, 2.5 to 3.3V
Pull Range	±25 to ±1600 ppm in VCXO and DCXO
Drive Strength Control	1 to 11 ns rise/fall time for low to high output drive
Spread Spectrum	±0.25 to ±2.0% center spread and -0.5 to -4.0% down spread
Additional Options	
Packages	2016, 2520, 3225, 5032, 7050 plastic packages
Temperature Range	-20 to +70°C, -40 to +85°C, -40 to +105°C, -40 to +125°C, or -55 to +125°C
Output Signaling	Differential: LVPECL, LVDS or HCSL, Single-ended: LVCMOS

Don't waste time searching and waiting for oscillators

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- Develop prototypes fast with always-in-stock field programmable devices
- Optimize system performance with custom frequencies

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