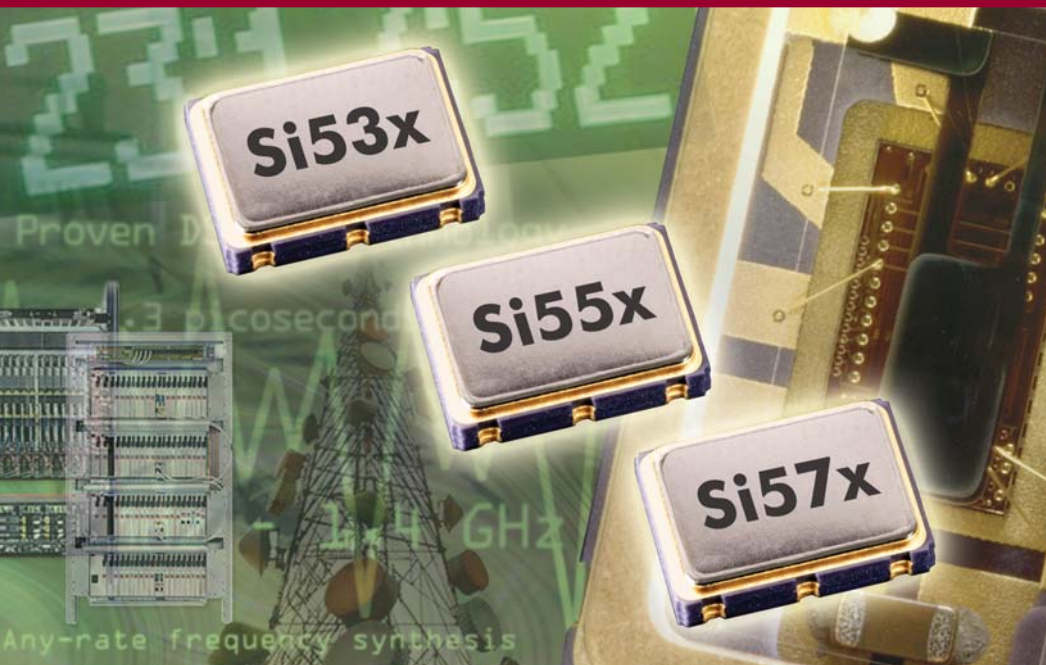


Frequency Control Solutions

THE NEW STANDARD IN FREQUENCY CONTROL



High-Frequency, Low Jitter Oscillators

Any-Rate Output Frequencies

Short, Predictable Lead Times

FEATURES

- Wide range of operation: 10 MHz to 1.4 GHz
- Superior jitter performance: $<0.3 \text{ ps}_{\text{RMS}}$ (typ)
- Any-rate, quad, dual and single frequency configurations available
- 5x better frequency stability than SAW oscillators
- 10x better initial accuracy than SAW or inverted mesa crystal oscillators
- 3x better control voltage linearity than SAW or inverted mesa crystal oscillators
- LVPECL, LVDS, CML or CMOS output formats
- Operates from 3.3 V, 2.5 V or 1.8 V supply
- Industry standard 5x7 mm packaging

APPLICATIONS

- SONET/SDH
- Wireless infrastructure
- Networking
- Datacom
- Low jitter clock generation
- Optical modules
- Test and measurement
- Industrial electronics
- Broadcast video infrastructure

ACTUAL SIZE



Top View

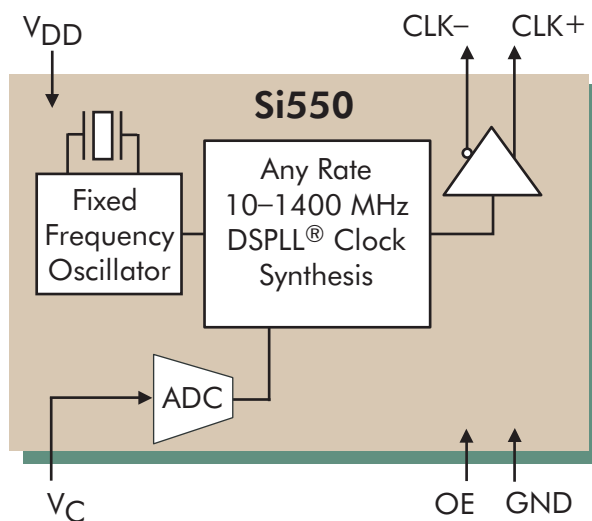


Back View

DESCRIPTION

Supporting a frequency range from 10 MHz to 1.4 GHz, the Si5xx series of XO's and VCXO's deliver the industry's highest reliability, unmatched performance and shortest lead times. Through the use of a fixed, low-frequency resonator architecture, all Si5xx devices bring a new level of reliability to the high-frequency oscillator market. Silicon Labs' proprietary DSPLL[®] technology eliminates numerous complex manufacturing steps by moving the frequency control and tuning function into a high-performance, mixed-signal IC, resulting in short predictable lead times for any oscillator frequency. The Si5xx devices are available in industry standard, RoHS compliant, 5x7 mm surface mount packages with support for all common output formats: LVPECL, LVDS, CMOS and CML.

Si550 BLOCK DIAGRAM



SOLUTIONS GUIDE

FINALLY,
PRECISION CLOCKS THAT
ARE ON TIME!



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Unmatched Performance

The Si5xx family of products provide ultra-low jitter performance ($<0.3 \text{ ps}_{\text{RMS}}$ typical) 12 KHz to 20 MHz and a wide frequency range. Single, dual, quad and any-rate user-programmable frequency devices are available.

Highest Reliability

Utilizing Silicon Labs' DSPLL technology, the Si5xx family of oscillators offers total frequency stability over time and temperature that is more than five times better than competing SAW devices. Compared to inverted mesa crystal oscillators, Silicon Labs offers a solution that is more mechanically robust while providing better aging stability.

Industry's Shortest Lead Times

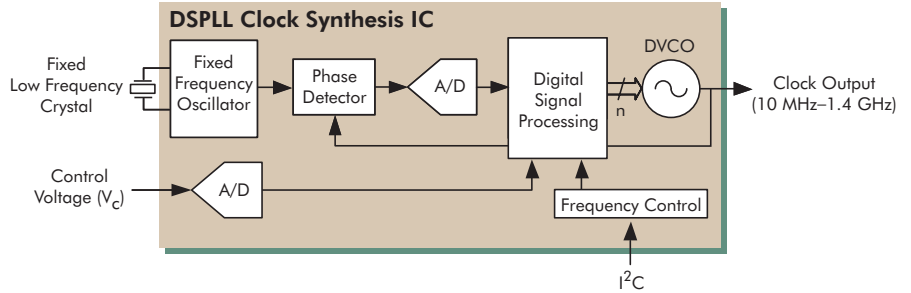
Silicon Labs changes the manufacturing model enabling the shortest and most predictable lead times for high-frequency, low-jitter oscillators. By moving the frequency control and tuning into a mixed-signal IC, complex manufacturing steps are either eliminated or simplified.

Frequency Control Product Matrix

Part Number	Type	Control	Frequency	Frequency Range	Package	Stability Options (ppm)	Kv Options (ppm/V)
Si530/1	XO	Pin	Single	10 to 945 MHz 970 to 1134 MHz 1213 to 1417 MHz	5x7 mm 6 pad	± 7 ± 20 ± 50	N/A
Si532/3	XO	Pin	Dual		5x7 mm 6 pad		N/A
Si534	XO	Pin	Quad		5x7 mm 8 pad		N/A
Si550	VCXO	Pin	Single	10 to 945 MHz 970 to 1134 MHz 1213 to 1417 MHz	5x7 mm 6 pad	± 20	33, 45, 90, 135, 180, 356
Si552	VCXO	Pin	Dual		5x7 mm 6 pad	± 50	
Si554	VCXO	Pin	Quad		5x7 mm 8 pad	± 100	
Si570	XO	I ² C	Any-Rate Programmable	10 to 215 MHz	5x7 mm 8 pad	± 20 ± 50	N/A
Si571	VCXO	I ² C	Any-Rate Programmable	10 to 810 MHz 10 to 1417 MHz	5x7 mm 8 pad	± 20 ± 50 ± 100	33, 45, 90, 135, 180, 356

Innovative DSPLL Technology

Silicon Labs' proprietary DSPLL technology eliminates numerous complex manufacturing steps required to frequency tune traditional SAW and crystal-based implementations by moving the frequency synthesis capability into a high-performance, mixed-signal IC. The Si5xx devices derive frequencies up to 1.4 GHz from a simple, low frequency resonator and calibrates the output to an initial accuracy of ± 1 ppm. The use of a low-frequency crystal provides tremendous improvements in aging, temperature stability and mechanical reliability.



Si57x Programmable Devices

The user-programmable Si570 XO and Si571 VCXO generate any output frequency from 10 MHz to 1.4 GHz with $0.3 \text{ ps}_{\text{RMS}}$ jitter performance. One device can generate any frequency across this range eliminating the need for multiple fixed-frequency oscillators in multi-frequency applications. The devices are programmable using an industry standard I²C interface.

