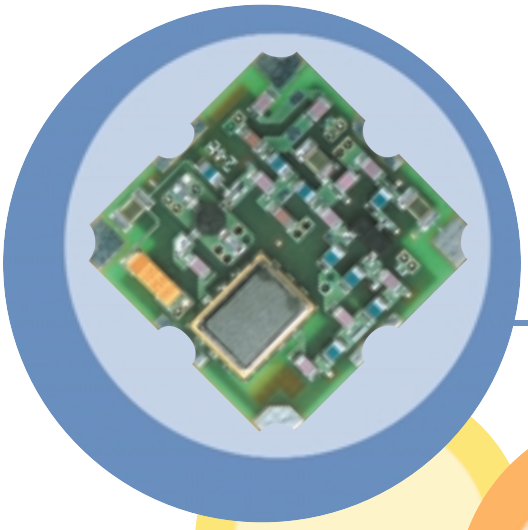
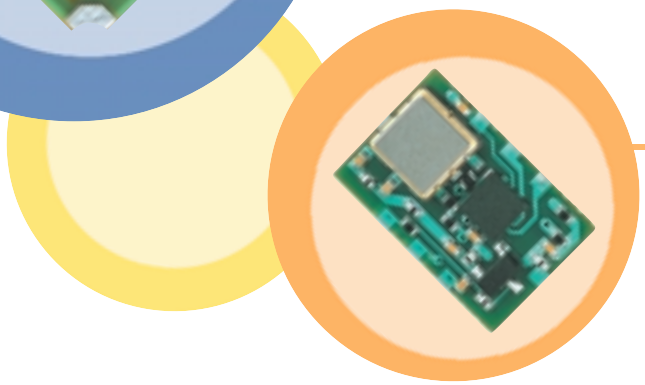
BROADBAND ACCESS APPLICATIONS

Sine Wave and ECL VCSO Product Brochure





Your Total SAW Solution

SAWTEK INCORPORATED

www.sawtek.com

BROADBAND ACCESS APPLICATIONS

Sine Wave and ECL VCSOs

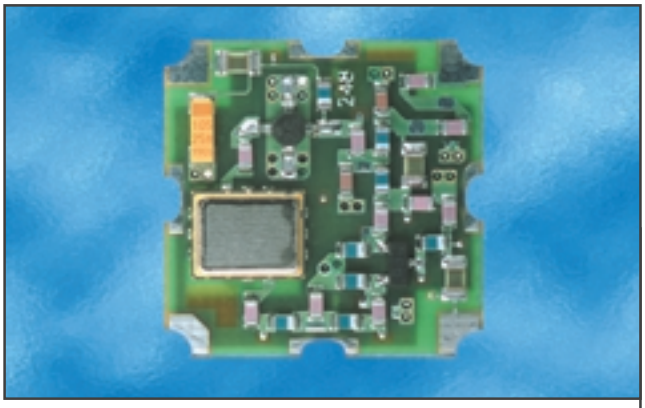
Sawtek proudly offers two Voltage-Controlled SAW Oscillator (VCSO) products ideally suited to the most demanding broadband access applications. Our single-ended sine wave oscillator is maximized for SONET, LMDS/MMDS point-to-point/multi-point microwave and software radio designs. Sawtek's differential output Emitter Coupled Logic (ECL) clock is perfect for the low jitter requirements of SONET, Ethernet and network servers. Both products generate frequencies fundamentally, so no subharmonics are produced which enhances their ability to reduce jitter. With 600 ppm of typical tuning range, the units are able to tune back to center frequency over a variety of conditions such as temperature, load pulling, voltage pushing, set-on and aging.

Single-Ended Sine Wave VCSO

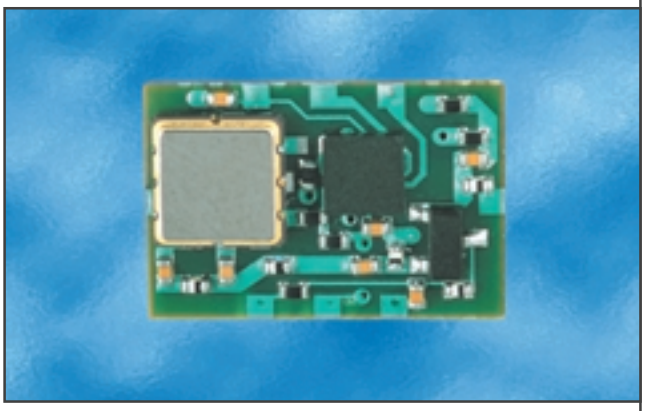
- Frequencies from 300 MHz to 2.5 GHz with 622.08 MHz, 666.51 MHz and 2.488 GHz being standard frequencies
- Surface Transverse Wave (STW) resonator technology offers low phase noise, and extremely low noise floors to insure exceptional high frequency jitter performance (< 5 fS RMS)
- Low g-sensitivity versions available up to $5x10^{-10}/g$
- These narrow-band VCSO's are designed for use in phase locked loop applications

Differential ECL Clock VCSO

- Frequencies from 600 MHz to just over 1 GHz with standard frequencies at 622.08 MHz and 666.51 MHz
- STW resonator technology offers very low jitter performance at high fundamental frequencies (< .3 pS RMS)
- These narrow-band ECL VCSO's are designed for use in phase locked loop applications



Single-Ended Sine Wave VCSO



Differential ECL Clock VSCO

Single-Ended Sine Wave VCSO

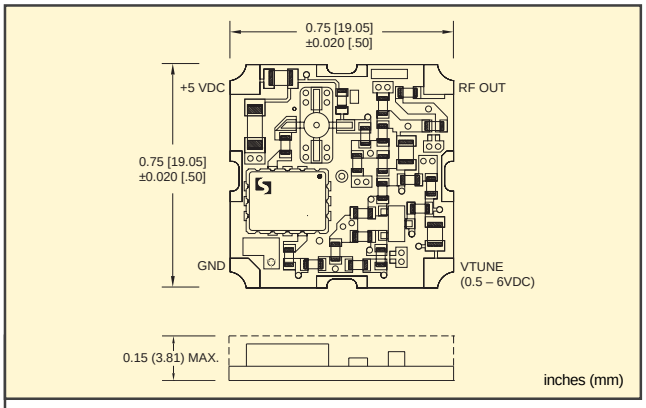
Frequency:	**622.08 or 666.5143 MHz**	**2488.32 MHz**
Phase Noise:	-75 dBc/Hz @ 100 Hz typical	-60 dBc/Hz @ 100 Hz typical
	-105 dBc/Hz @ 1 kHz typical	-90 dBc/Hz @ 1 kHz typical
	-135 dBc/Hz @ 10 kHz typical	-120 dBc/Hz @ 10 kHz typical
	-155 dBc/Hz @ 100 kHz typical	-145 dBc/Hz @ 100 kHz typical
	-165 dBc/Hz @ 1 MHz typical	-165 dBc/Hz @ 1 MHz typical
DC Power:	5 VDC, 65 mA maximum	
Output Power:	+10 dBm nominal; +8 to +13 dBm over temperature	
Tuning Linearity:	+/- 7% typical; +/- 20% maximum	
Tune Range / Voltage:	Able to tune back to Fo +/- 50 ppm over all environmental conditions / 0 to 6 VDC	
Jitter:	12 kHz to 20 MHz: 1.8 fS RMS typical / 50 kHz to 80 MHz: 3.2 fS RMS typical	
Temperature Range:	-40 to 85°C	
Harmonics:	<-20 dBc	
Subharmonics:	None	

For the latest product information, please visit our website at **www.sawtek.com.**

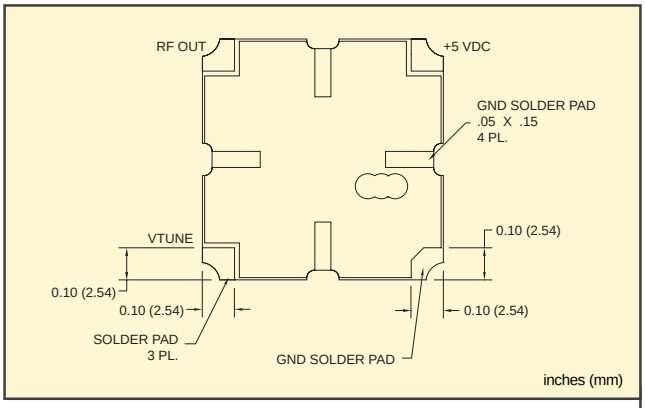
BROADBAND ACCESS APPLICATIONS

The Sawtek Difference

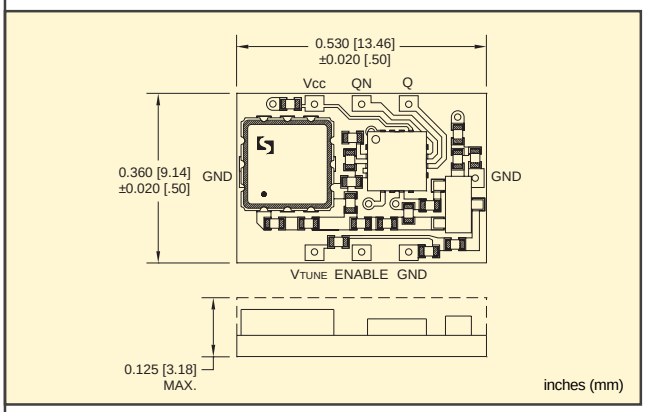
Sine Wave and ECL VCSOs



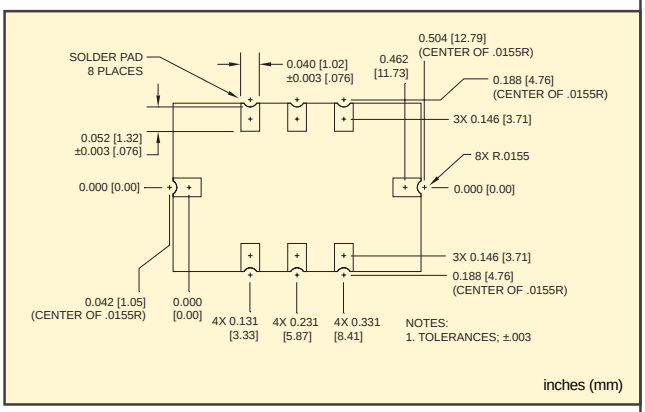
Top View / Side View



Bottom View – Solder Pad Layout



Top View / Side View



Bottom View – Solder Pad Layout

Differential ECL Clock VCSO

Frequency: 622.08 or 666.5143 MHz
Phase Noise: -67 dBc/Hz @ 100 Hz typical, -93 dBc/Hz @ 1 kHz typical, -115 dBc/Hz @ 10 kHz typical, -133 dBc/Hz @ 100 kHz typical, -139 dBc/Hz @ 1 MHz typical
DC Power: 5 VDC, 65 mA typical (3.3 V available upon request)
Tuning Linearity: +/- 7% typical; +/- 20% maximum
Tune Range / Voltage: Able to tune back to Fo +/- 50 ppm over all environmental conditions / 0.5 to 4.5 VDC
Temperature Range: -40 to 85°C
Subharmonics: None
Output Type: 10 K ECL (100 K ECL also possible – must specify)
Output Low, 25 C: Vcc-1.95 to Vcc-1.63 V / **Output High, 25 C:** Vcc-0.98 to Vcc-0.81 V
Output Rise / Fall Time: 225 pS typical, 350 pS maximum / 225 pS typical, 350 pS maximum
Jitter: 12 kHz to 20 MHz: 0.12 pS typical / 50 kHz to 80 MHz: 0.23 pS typical
Spurious: <-60 dBc, non-induced
Symmetry: 45/55 worst case
Tune Line Impedance: >10 kOhm equivalent (Reverse biased diodes)
Output Load: 50 Ohms to –2 Volts maximum or 30 mA maximum

SAWTEK INC.

Contact Information

Your Total SAW Solution

Sawtek established its global reputation with high-performance IF SAW filters, and now offers a full portfolio of RF and IF SAW filters for mobile handsets and wireless infrastructure and oscillators for broadband applications. Our service, technical innovation, product portfolio and systems work together to set us apart, and make Sawtek Your Total SAW Solution.

- Rapid Time-to-Market
- Comprehensive Product Portfolio
- Innovative Design and Simulation
- Engineer-to-Engineer Technical Support
- Best Value
- Advanced, High-Volume Manufacturing
- Sophisticated Operations and Logistics Systems

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SAWTEK INCORPORATED

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