Standard Voltage Controlled SAW Oscillators

High performance for less cost is the standard for Sawtek's family of hybrid voltage controlled SAW oscillators (VCSOs). Offered in operating frequencies from 300 MHz to 1,000 MHz, these standard VCSOs are designed for your commercial and military applications.

Standard VCSO Sine Wave Output

Part Number	Center Frequency (MHz)	Nominal Tuning Bandwidth (ppm)	Package Style
852103	300.000	450	S
852146	311.000	900	S
852147	320.000	550	Flatpack
852104	400.000	450	S
852105	500.000	1000	S
852140	512.000	650	S
852106	600.000	500	S
852144	640.000	550	S
854142	661.408	650	S
852107	700.000	450	S
852108	800.000	450	S
852109	900.000	500	S
852110	1000.000	500	S

Standard VCSO ECL Output

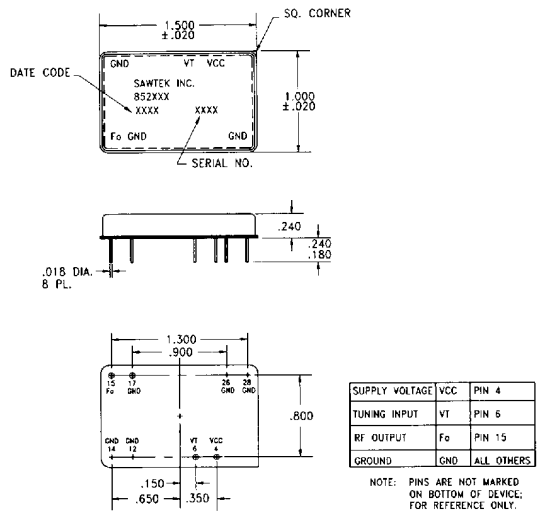
Part Number	Center Frequency (MHz)	Nominal Tuning Bandwidth (ppm)	Package Style
852143	622.080	900	DIP

For Pricing Information

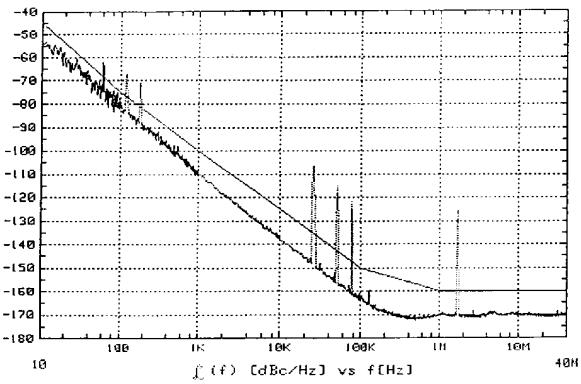
Call Penstock today at ***1-800-736-7862*** for specifications or to place your order for any of the standard SAW oscillators listed above. However, if your oscillator needs fall between the incremental 100 MHz operating frequencies of the standard parts listed, contact Sawtek at 407/886-8860. Our unique modular optimization process allows us to produce them more quickly and at a lower cost.

Advantages

- ▲ *Quartz frequency stability*
- ▲ *Superior spectral purity and phase noise performance guaranteed over the voltage tuning range*
- ▲ *Excellent tuning linearity*
- ▲ *Onboard voltage regulation*
- ▲ *Vibration-immune monolithic spiral inductors*
- ▲ *Rugged, hermetic metal package*
- ▲ *Off-the-shelf availability*



Standard VCSO Package (Style S)



600 MHz Standard VCSO Phase Noise Performance

To the best of our knowledge, this information was correct at the time of printing. Sawtek reserves the right to modify these specifications when necessary to provide optimum performance and cost.

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Standard Voltage Controlled SAW Oscillators

Parameters	Specifications			
Center Frequency (100 MHz Increments)	300 MHz - 400 MHz	500 MHz - 600 MHz	700 MHz - 800 MHz	900 MHz - 1000 MHz
Frequency Tuning Range	Sufficient to maintain center frequency for all operating conditions.			
Tuning Control Voltage	+2 to +12 VDC	+2 to +12 VDC	+2 to +12 VDC	+2 to +12 VDC
RF Output Power at f_0 Nominal at room temperature, 50 Ω Variation from nominal for all conditions Variation for temperature only	 +12 dBm +3, -2 dBm max. 4.0 dBm max	 +10 dBm +3, -2 dBm max. 3.0 dBm max.	 +10 dBm +3, -2 dBm max. 3.0 dBm max.	 +10 dBm [1] +3, -2 dBm max. 4.0 dBm max.
Spurious Output Attenuation Harmonic Spurious at 2 f_0 at ≥3 f_0 Non-Harmonic Spurious at maximum specified supply ripple	 -20 dBc max. -30 dBc max. -60 dBc max	 -20 dBc max. -30 dBc max. -60 dBc max.	 -20 dBc max. -30 dBc max. -60 dBc max.	 -20 dBc max. -30 dBc max. -60 dBc max.
Maximum SSB Phase Noise Level at 10 Hz at 100 Hz at 1 kHz at 10 kHz at 100 kHz at 1 MHz (Floor)	 -50 dBc/Hz -80 dBc/Hz -105 dBc/Hz -130 dBc/Hz -150 dBc/Hz -160 dBc/Hz	 - 45 dBc/Hz - 75 dBc/Hz -100 dBc/Hz -125 dBc/Hz -150 dBc/Hz -160 dBc/Hz	 - 40 dBc/Hz - 70 dBc/Hz - 95 dBc/Hz -125 dBc/Hz -150 dBc/Hz -160 dBc/Hz	 - 35 dBc/Hz - 65 dBc/Hz - 90 dBc/Hz -115 dBc/Hz -140 dBc/Hz -150 dBc/Hz
Operating Load VSWR (Referenced to 50 Ω nominal)	1.5 : 1 max.	1.5 : 1 max.	1.5 : 1 max.	1.5 : 1 max.
DC Power Supply Operating Voltage Operating Current	 15 Volts ± 10% 70 mA max.	 15 Volts ± 10% 65 mA max.	 15 Volts ± 10% 65 mA max.	 15 Volts ± 10% 85 mA max.
Voltage Frequency Pushing	≤ 1 ppm/Volt	≤ 1 ppm/Volt	≤ 1 ppm/Volt	≤ 1 ppm/Volt
Tuning Range	450 ppm typical	500 ppm typical	400 ppm typical	500 ppm typical
Tuning Slope Variation	4.0:1 max. 2.5:1 typical	4.0:1 max. 2.5:1 typical	4.0:1 max. 2.5:1 typical	4.0:1 max. 2.5:1 typical
Modulation Rate	200 kHz min. 300 kHz typical	300 kHz min. 500 kHz typical	400 kHz min. 575 kHz typical	 300 kHz typical
Operating Temperature	-55° to + 85° C	-55° to + 85° C	- 55° to + 85° C	-55° to + 85° C
M.T.B.F. (MIL-STD 217-D, AIC)	>229,000 hours	>229,000 hours	>229,000 hours	>114,000 hours
Package	1.5 x 1.0 x .24-inch DIP			

Absolute Maximum Ratings

DC Supply Voltage Vcc, Pin 4	0 to + 20 VDC
[2] Tuning Voltage V_T, Pin 6	0 to + 15 VDC
Load VSWR	Infinity
Ambient Temperature (Powered)	-55° to + 95° C
(Storage)	-55° to + 105° C
Supply Voltage Ripple (peak-to-peak)	20 mV max., 100 Hz to 100 kHz

[1] RF Power of P/N 852110 is temporarily +8 dBm. **[2] Polarity reversal will result in damage.**