



CRYSTEK

CRYSTALS

A DIVISION OF CRYSTEK CORPORATION

CVCSO-914M3 Model

9×14 mm SMD, 3.3V, SineWave



*Ultra-Low Phase Noise
True SineWave
SAW Based VCISO*

Model CVCSO-914M3 is a voltage-controlled SAW (surface acoustic wave) Oscillator (VCISO). SAW crystal technology provides low-noise and low-jitter performance with true sinewave output. Features include -135 dBc/Hz phase noise at 10 kHz offset, 3.3V input voltage, -20°C to +70°C operating temperature, and 9×14 mm SMT package. The oscillator has no sub-harmonic and the second harmonic is typically -20 dBc.

Applications include PLL frequency translation, test and measurement, avionics, point-to-point radios, and multi-point radios.

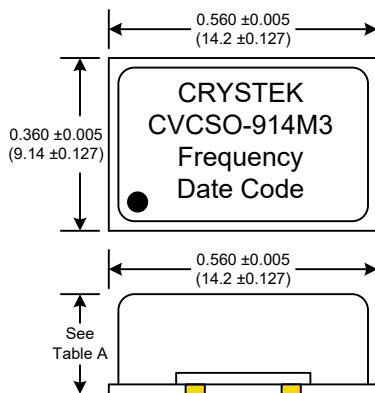
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Ultra-Low Phase Noise True SineWave SAW Based VCISO

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Frequency Range: 250 MHz to 1000 MHz
Temperature Range: -20°C to +70°C
Storage: -40°C to 90°C
Input Voltage: 3.3V ±5%
Control Voltage Range: 0V to 3.3V
Settability At Nominal (25°C): +0.5V to 2.0V
Frequency vs Temperature: ±200ppm Typical
Tuning Sensitivity (Kv): +120ppm/V Typical
Input Current: 25mA Typical, 35mA Max

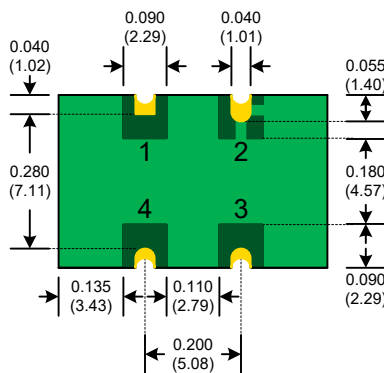
Output: True SineWave
Pullability APR: ±30ppm Min
Linearity: ±20% Max
Output Power: +8dBm Min into 50 Ω Load
Start-Up Time: 2mSec Typical, 10mSec Max
2nd Harmonic: -20dBc Typical, -15dBc Max
Sub-Harmonics: None
Modulation BW: >20kHz @ -3dB
Phase Jitter: 12kHz~80MHz <1ps RMS (1-sigma) Max
Phase Noise (Typical):
 1kHz -105 dBc/Hz
 10kHz -135 dBc/Hz
 100kHz -145 dBc/Hz
 1MHz -160 dBc/Hz
 10MHz -170 dBc/Hz
G-sensitivity: 0.9×10⁻⁹ per g



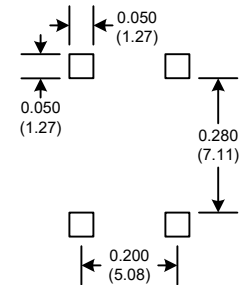
Package Height Options (Max)

	inches	mm
Standard	0.210	5.33
Option L	0.135	3.43

Table A



SUGGESTED PAD LAYOUT



PAD FINISH: Immersion Gold (ENIG); 5 micro inches maximum

Pad	Connection
1	Volt. Control
2	GND
3	Output
4	Vdd

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Available Frequencies (MHz):
250.000 840.000
640.000 916.000
800.000 1000.000

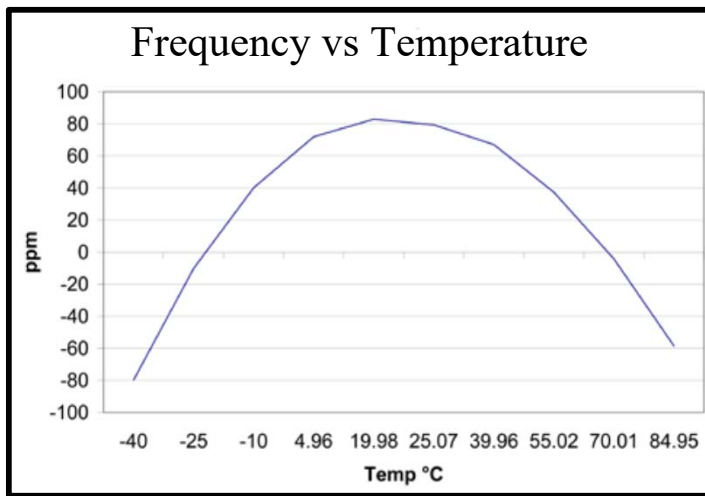
Custom Frequencies Available with NRE Fee

Crystek Part Number Guide

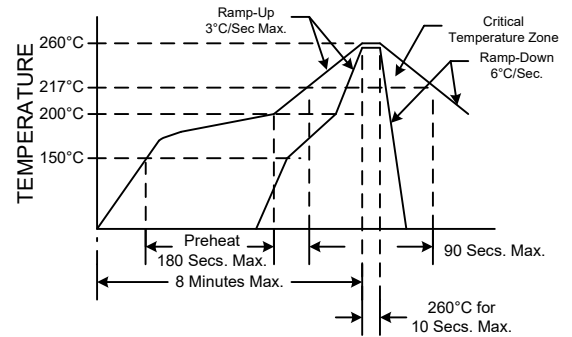
CVCSO - 914M3 L - 640.000

#1 #2 #3 #4

- #1 Crystek Saw Voltage Controlled Oscillator
- #2 Model 914 with -20/70°C Temperature Range
- #3 Height (L = 0.135") (Blank = 0.210")
- #4 Frequency in MHz: 3 or 6 decimal places



RECOMMENDED REFLOW SOLDERING PROFILE



NOTE: Reflow Profile with 240°C peak also acceptable.

Parameter	Conditions
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A
Solderability	MIL-STD-883, Method 2003
Solvent Resistance	MIL-STD-202, Method 215
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition I or J
Thermal Shock	MIL-STD-883, Method 1011, Condition A
Moisture Resistance	MIL-STD-883, Method 1004

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16850 ORIDLE ROAD • FORT MYERS, FLORIDA 33912
PHONE: 239-561-3311 • 800-237-3061
WWW.CRYSTEK.COM