

Ultra-Low Phase Noise SAW VCSO

CVCSO-914M3
True SineWave
SAW Based VCSO
9×14mm SMD
3.3 Volt



Model CVCSO-914M3 is a voltage-controlled SAW (surface acoustic wave) Clock Oscillator (VCSO). 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.

Rev: A
Date: 18-Oct-12
Page 1 of 3



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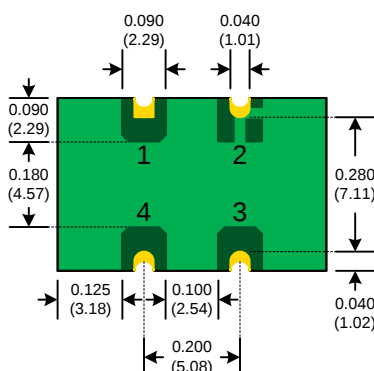
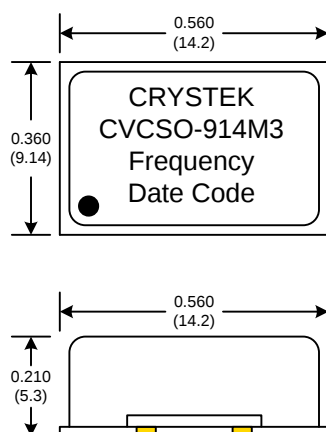
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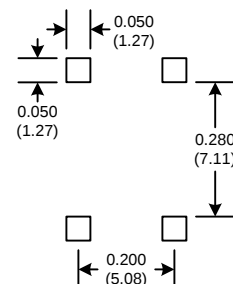
Frequency Range: 250 MHz to 1090 MHz
Temperature Range: -20°C to +70°C
Storage: -40°C to 90°C
Input Voltage: 3.3V ±5%
Control Voltage: 1.65V ±1.65V
Settability At Nominal (25°C): 1.5V ±0.5V
Frequency vs Temperature: ±200ppm Typical
Tuning Sensitivity (Kv): +120ppm/V Typical
Input Current: 25mA Typical, 35mA Max

Output: True SineWave
Pullability APR: ±50ppm 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



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

SUGGESTED PAD LAYOUT



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Page 2 of 3



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Available Frequencies (MHz):

250.000	916.000
640.000	1000.000
800.000	1090.000
840.000	

Custom Frequencies Available with NRE Fee

Crystek Part Number Guide

CVCSO - 914M3 - 640.000

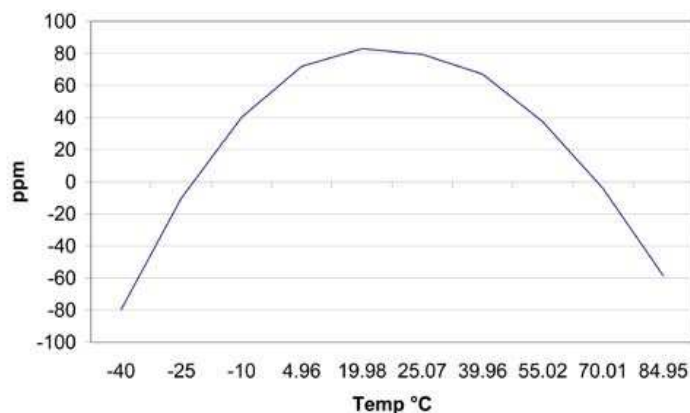
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#2

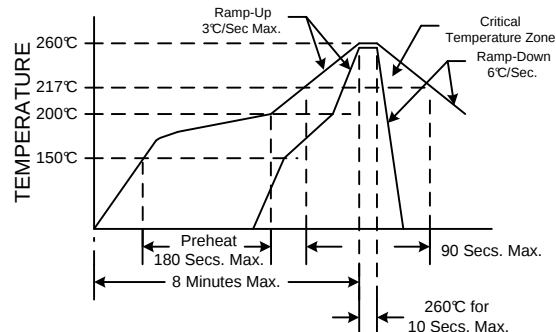
#3

#1 Crystek Saw Voltage Controlled Oscillator
#2 Model 914 with -20/70°C Temperature Range
#3 Frequency in MHz: 3 or 6 decimal places

Frequency vs Temperature



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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Page 3 of 3



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