

Ultra-Low Phase Noise 1GHz SAW VCSO

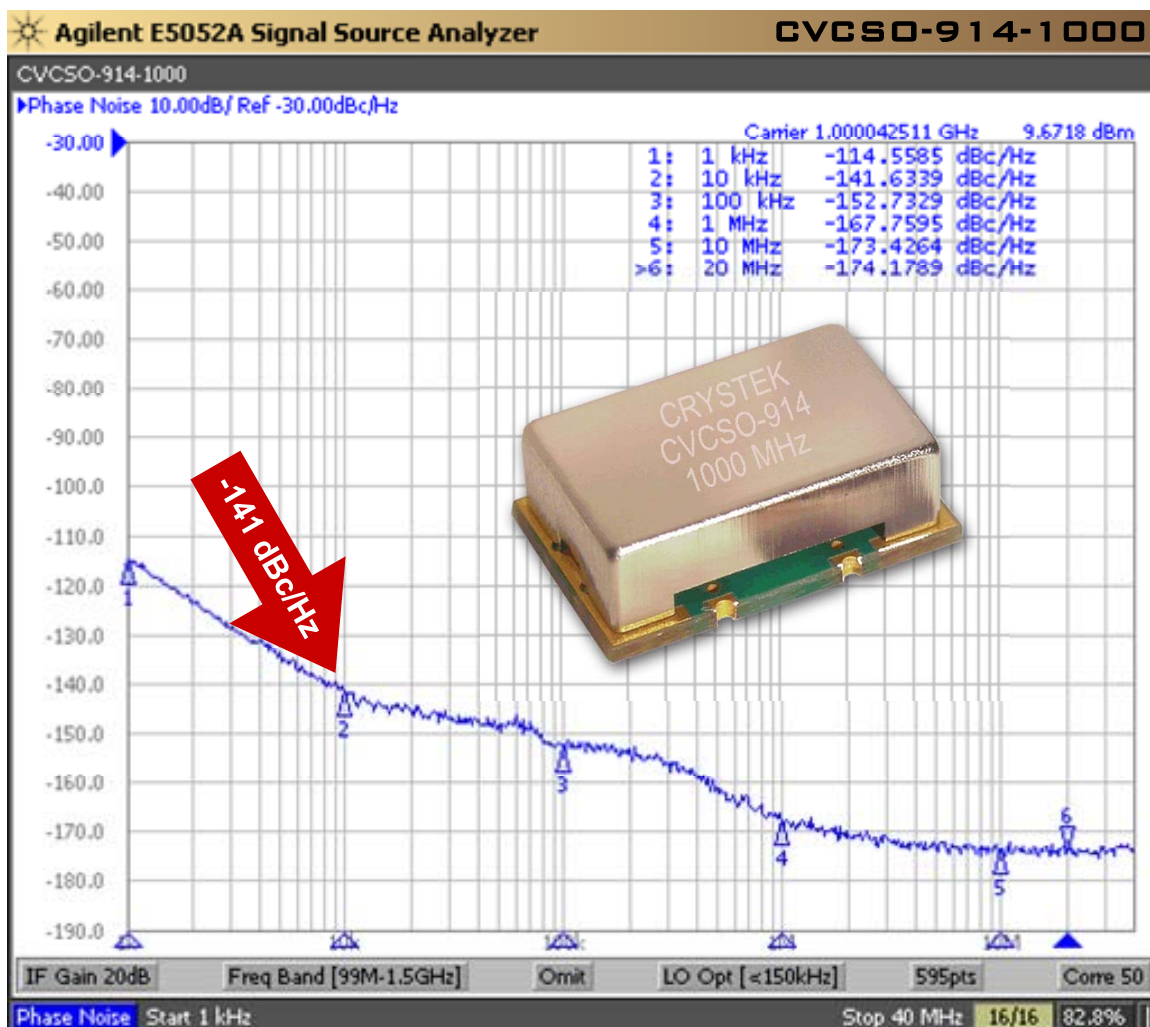
CVCSO-914-1000

True SineWave

SAW Based VCSO

9×14mm SMD

5 Volt



Model CVCSO-914-1000 is a 1 GHz 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 -138 dBc/Hz phase noise at 10 kHz offset, 5V input voltage, -20°C to +70°C operating temperature, and 9×14 mm SMT package. The CVCSO-914X offers an operating temperature range of -40°C to +85°C. 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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SAW Based VCSO

9×14mm SMD

5 Volt



Frequency:

1 GHz

Temperature Range:

-20°C to +70°C

CVCSO-914X-1000 option

-40°C to +85°C

Storage:

-40°C to 90°C

Input Voltage:

5.0V ±0.25V

Control Voltage Range:

0V to 5.0V

Settability At Nominal (25°C):

+0.5V to 2.0V

Tuning Sensitivity (Kv):

+120ppm/V

Frequency vs Temperature:

±100ppm Typical

Input Current:

25mA Typical, 35mA Max

Output:

True SineWave

Pullability APR:

±50ppm Min

Linearity:

±20% Max

Output Power:

+10dBm 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 Noise Typical:

1kHz

-105 dBc/Hz

10kHz

-138 dBc/Hz

100kHz

-150 dBc/Hz

1MHz

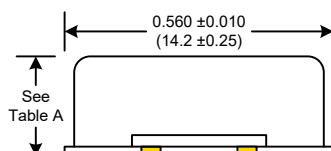
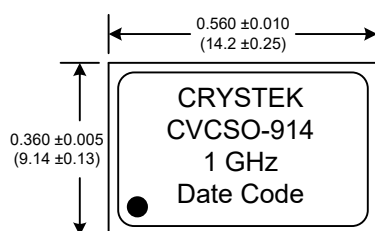
-160 dBc/Hz

10MHz

-170 dBc/Hz

G-sensitivity:

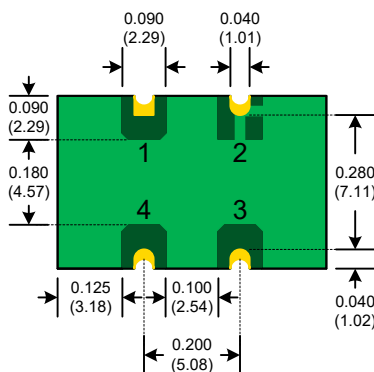
0.9×10⁻⁹ per g



Package Height Options

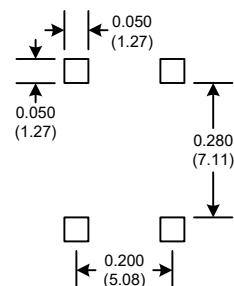
	inches	mm
Standard	0.210	5.33
Option L	0.135	3.43

Table A



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

SUGGESTED PAD LAYOUT



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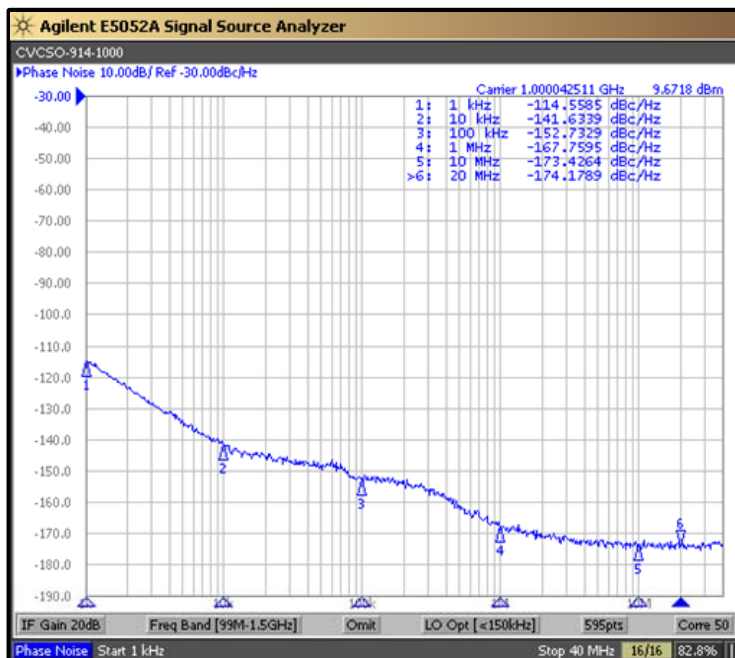
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Crystek Part Number Guide

CVCSO - 914 X L - 1000.000

#1 #2 #3 #4

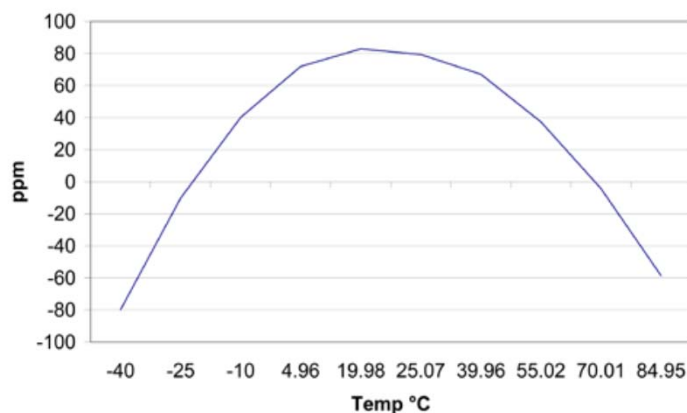
#1 Crystek Saw Voltage Controlled Oscillator

#2 Model 914

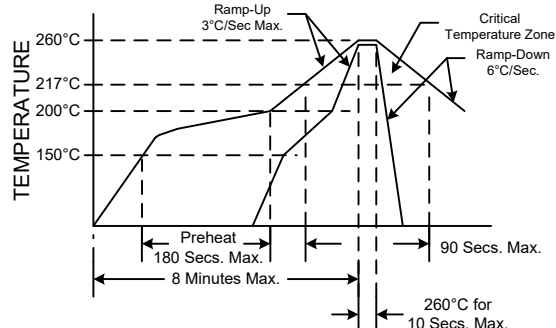
#3 Temperature Range (X = -40/85°C) (Blank = -20/70°C)

#4 Height (L = 0.135") (Blank = 0.210")

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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