

Ultra-Low Phase Noise SAW Clock

Frequency Range:

245.760 MHz to 1100 MHz



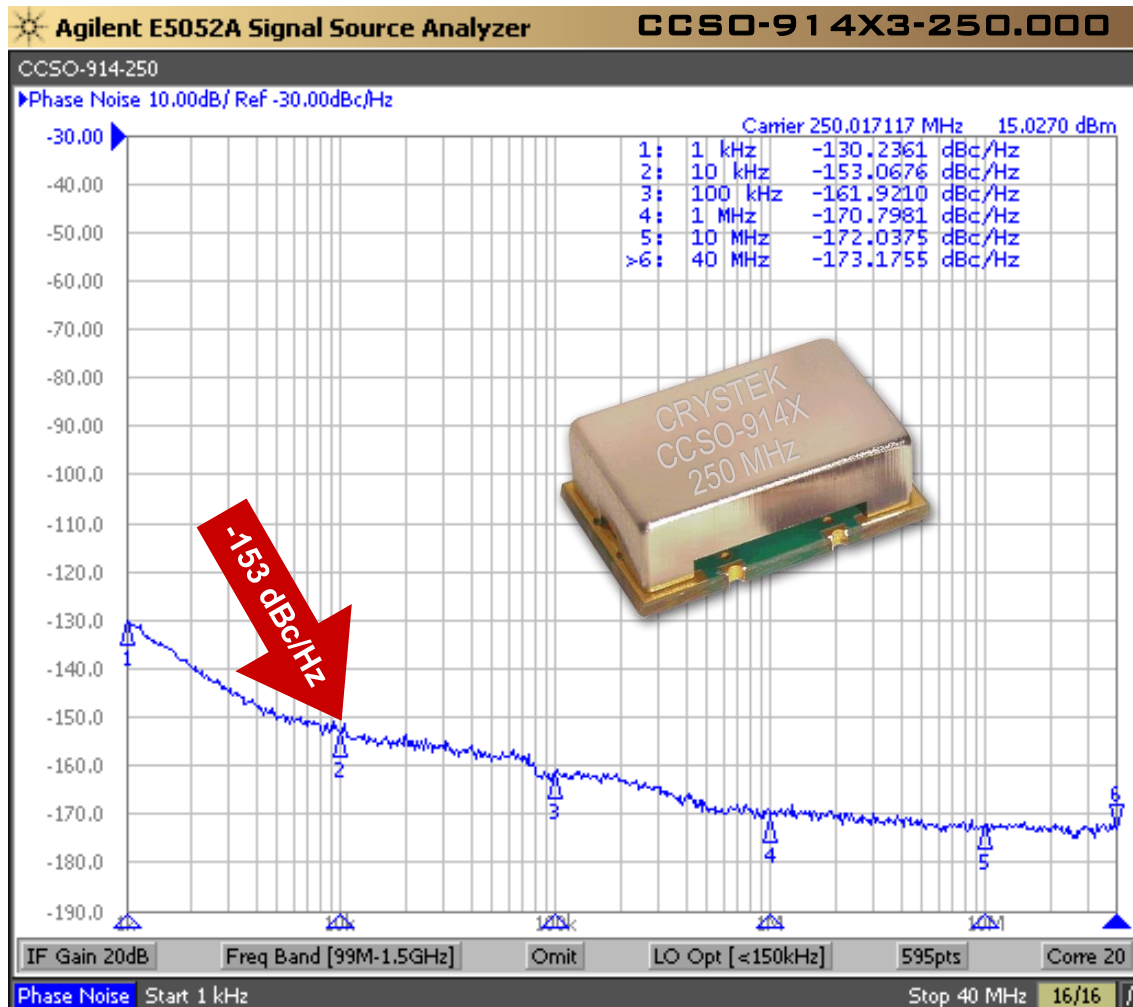
CCSO-914X

True SineWave

SAW Based Clock Oscillator

9×14mm SMD

3.3 & 5.0 Volt



Model CCSO-914X is a SAW (surface acoustic wave) Clock Oscillator (CCSO). SAW crystal technology provides low-noise and low-jitter performance with true sinewave output. Features include -145 dBc/Hz phase noise at 10 kHz offset at 1 GHz, 3.3V & 5V input voltage available, -40°C to +85°C operating temperature, FR5 PCB and 9×14 mm SMT package. The oscillator has no sub-harmonic and the second harmonic is typically -20 dBc.

Applications include:

Analog to Digital Converters (A/D Converters), System Clock for Network Clock Generator/Synchronizer, Clock for DDS, Test and Measurement, Avionics, Point-to-Point Radios, and Multi-point Radios.

Rev: AA

Date: 24-Apr-2023

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SAW Based Clock Oscillator
9×14mm SMD
3.3 & 5.0 Volt



Frequency Range:	245.760 MHz to 1100 MHz
Temperature Range:	-40°C to +85°C
Storage:	-45°C to 90°C
Input Voltage:	(option 3) 3.3V ± 0.165V
	(standard) 5.0V ± 0.25V
Frequency vs Temperature (Typical):	±200ppm (-40/85) ±150ppm (0/70)
Input Current:	25mA Typical, 45mA Max
Output:	True SineWave
Output Power:	(3.3V) +5dBm Min into 50 Ω Load
	(5.0V) +8dBm Min into 50 Ω Load
Start-Up Time:	2ms Typical, 10ms Max
2 nd Harmonic:	-20dBc Typical, -15dBc Max
Sub-Harmonics:	None

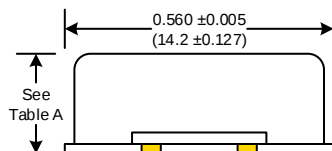
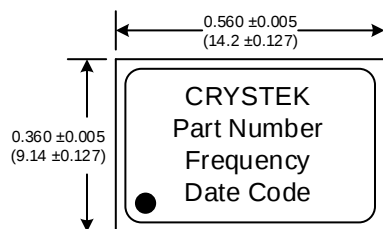


Phase Noise Typical @ 1 GHz:

1kHz	-116 dBc/Hz
10kHz	-145 dBc/Hz
100kHz	-168 dBc/Hz
1MHz	-170 dBc/Hz
10MHz	-171 dBc/Hz

G-sensitivity:

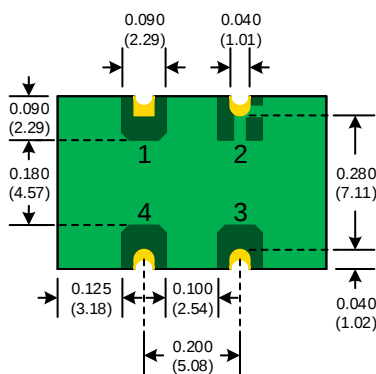
0.9×10^{-9} per g



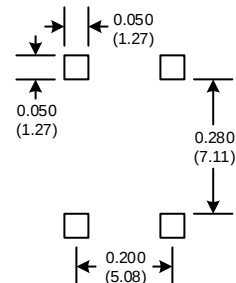
Package Height Options

	inches	mm
Standard	0.210	5.33
Option L	0.135	3.43

Table A



SUGGESTED PAD LAYOUT



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

Pad	Connection
1	N/C
2	GND
3	Output
4	Vdd

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Crystek Part Number Guide

CCSO - 914X 3 L - 1000.000
#1 #2 #3 #4 #5

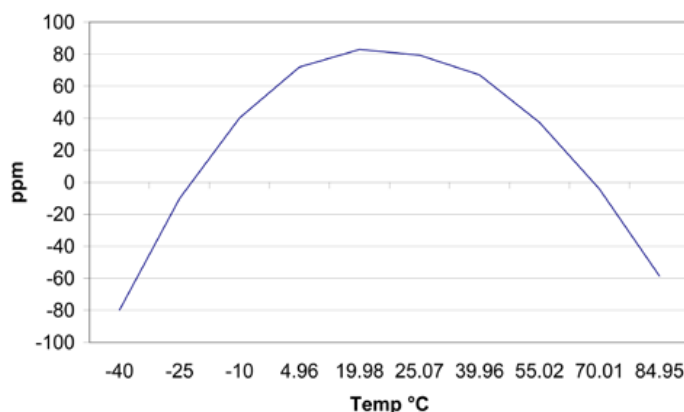
#1 Crystek Saw Osc.
#2 Model 914 with -40/85°C Temperature Range
#3 (3 = 3.3Volts) (Blank = 5 Volts)
#4 Height (L = 0.135") (Blank = 0.210")
#5 Frequency in MHz: 3 or 6 decimal places

Available Frequencies (MHz):
245.760 500.000 916.000
250.000 622.080 1000.000
433.920 800.000

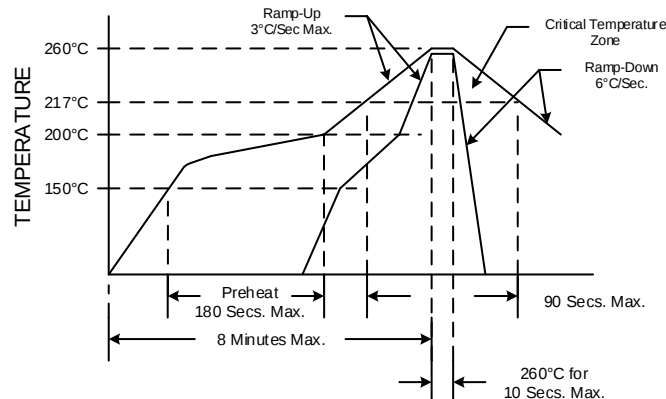
Custom Frequencies Available with NRE Fee

Similar Product in 5×7.5mm Package
[Click Here](#)

Frequency vs Temperature



RECOMMENDED REFLOW SOLDERING PROFILE



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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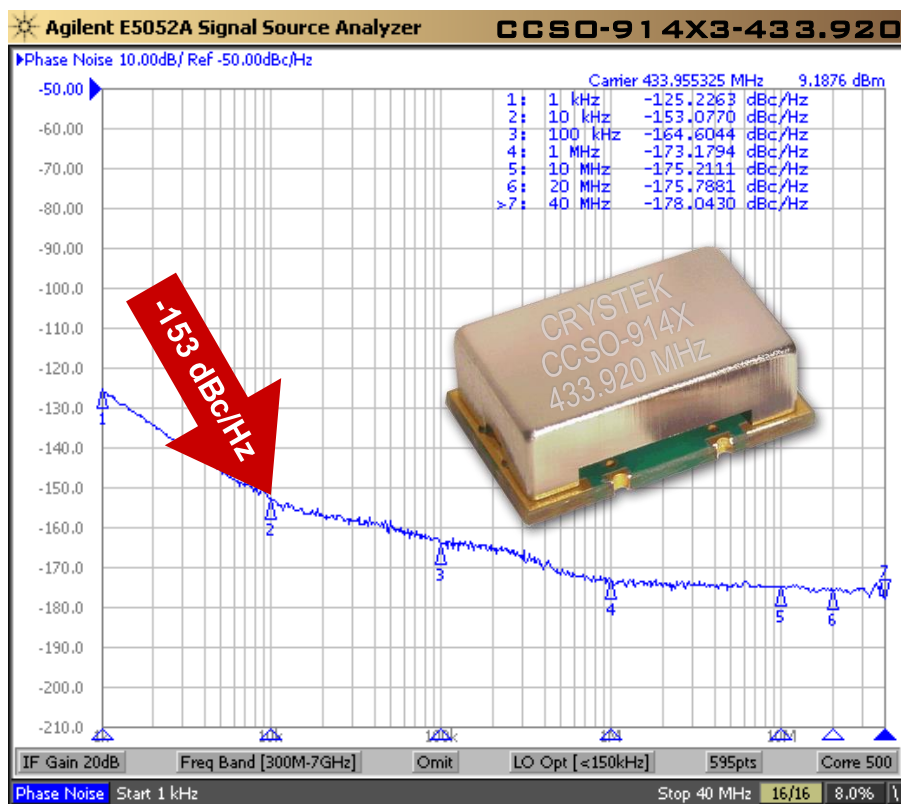
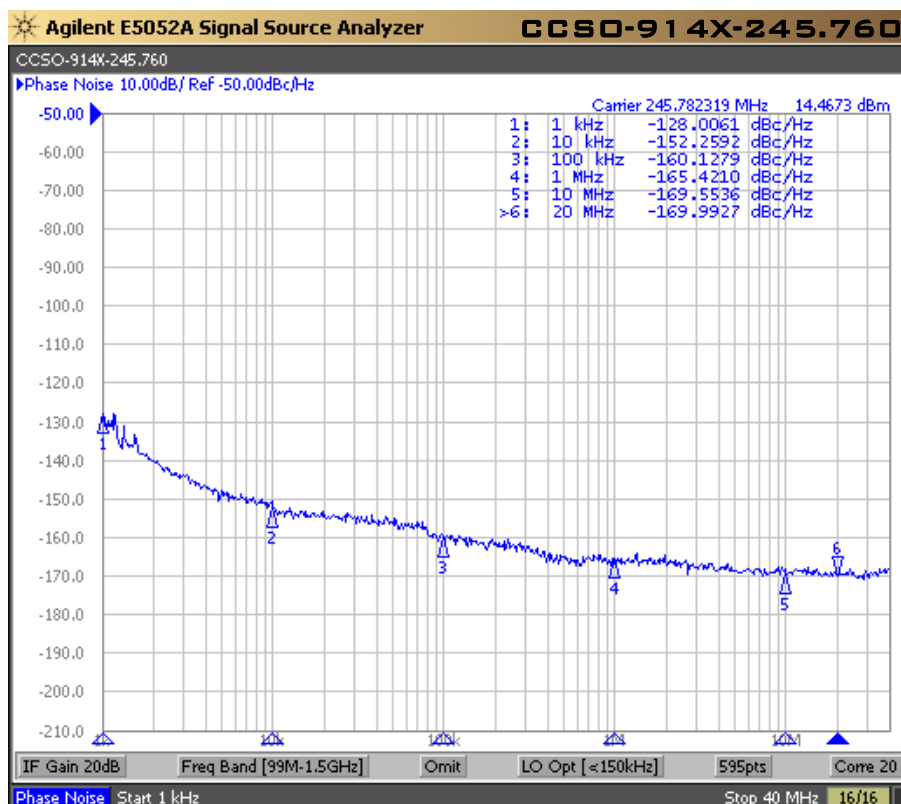
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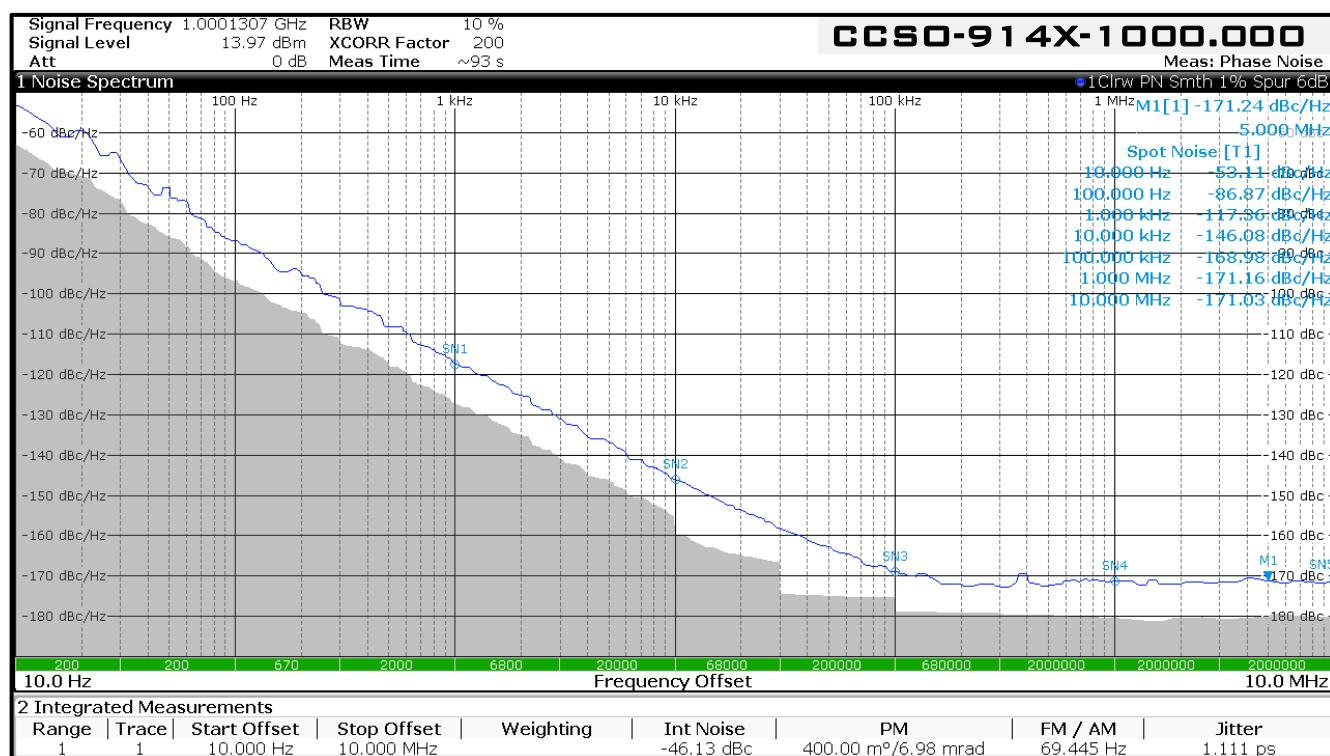
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