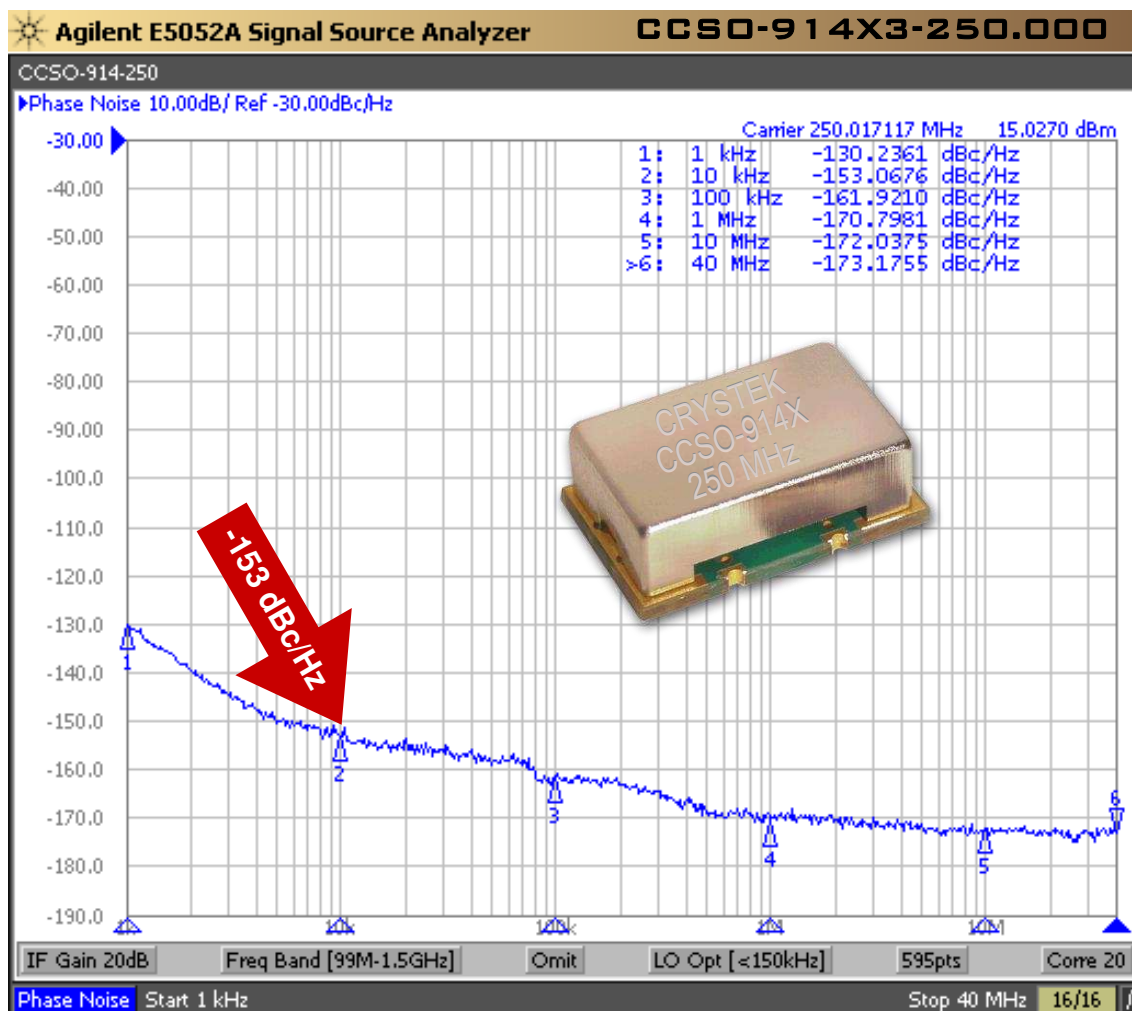


**Ultra-Low Phase Noise SAW Clock**  
**Frequency Range:**  
**250 MHz to 1090 MHz**



**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 -138 dBc/Hz phase noise at 10 kHz offset, 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.**

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**CCSO-914X**  
True SineWave  
SAW Based Clock Oscillator  
9×14mm SMD  
3.3 & 5.0 Volt



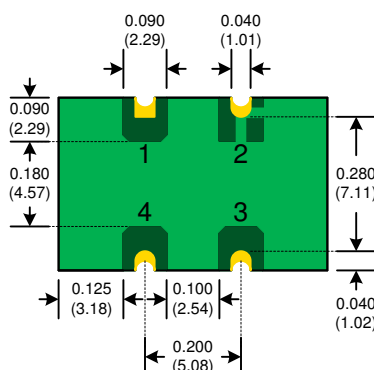
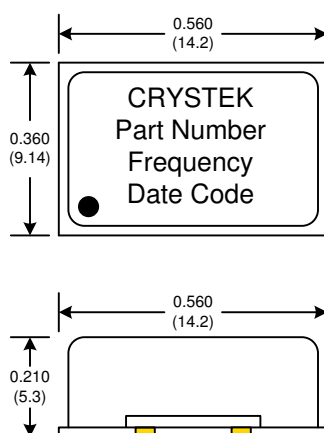
**Frequency Range:** 250 MHz to 1090 MHz  
**Temperature Range:** -40°C to +85°C  
**Storage:** -45°C to 90°C  
**Input Voltage:** (option 3) 3.3V ± 0.165V  
(standard) 5.0V ± 0.25V  
**Frequency vs Temperature:** ±100ppm Typical  
**Input Current:** 25mA Typical, 35mA Max  
**Output:** True SineWave  
**Output Power:** +8dBm Min. into 50 Ω Load  
**Start-Up Time:** 2mSec Typical, 10mSec Max  
**2<sup>nd</sup> Harmonic:** -20dBc Typical, -15dBc Max  
**Sub-Harmonics:** None



**Phase Noise Typical @ 1 GHz:**

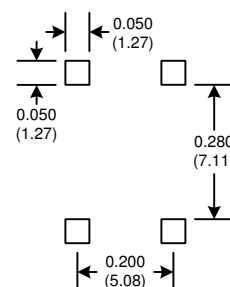
1kHz -110 dBc/Hz  
10kHz -138 dBc/Hz  
100kHz -150 dBc/Hz  
1MHz -160 dBc/Hz  
10MHz -170 dBc/Hz

**G-sensitivity:**  $0.9 \times 10^{-9}$  per g



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

**SUGGESTED PAD LAYOUT**



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# CCSO-914X

## True SineWave

## SAW Based Clock Oscillator

## 9×14mm SMD

## 3.3 & 5.0 Volt

Available Frequencies (MHz):

|         |            |            |
|---------|------------|------------|
| 250.000 | 622.017    | 669.416900 |
| 300.000 | 622.018    | 669.577    |
| 302.000 | 622.080    | 690.650260 |
| 310.000 | 622.164    | 800.000    |
| 315.500 | 622.310    | 868.350    |
| 359.400 | 644.608590 | 916.000    |
| 433.920 | 644.769    | 1000.000   |
| 500.300 | 666.604300 | 1090.000   |

Custom Frequencies Available with NRE Fee

### Crystek Part Number Guide

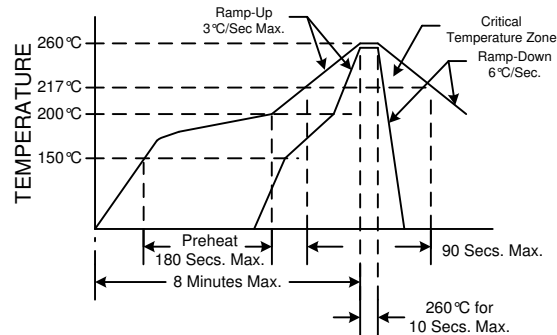
CCSO - 914X - 3 - 315.500

#1 #2 #3 #4

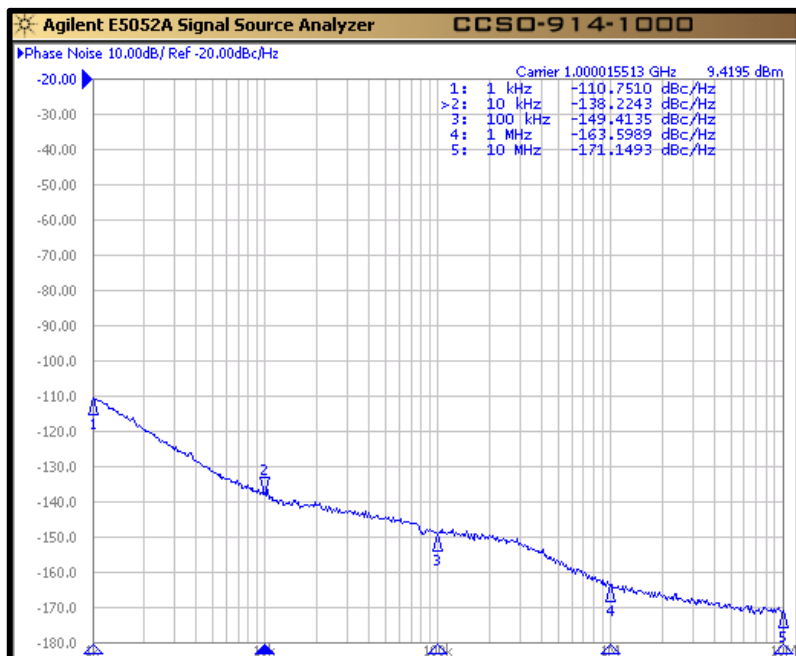
- #1 Crystek Saw Osc.
- #2 Model 914 with -40/85°C Temperature Range
- #3 (3 = 3.3Volts) (Blank = 5 Volts)
- #4 Frequency in MHz: 3 or 6 decimal places

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

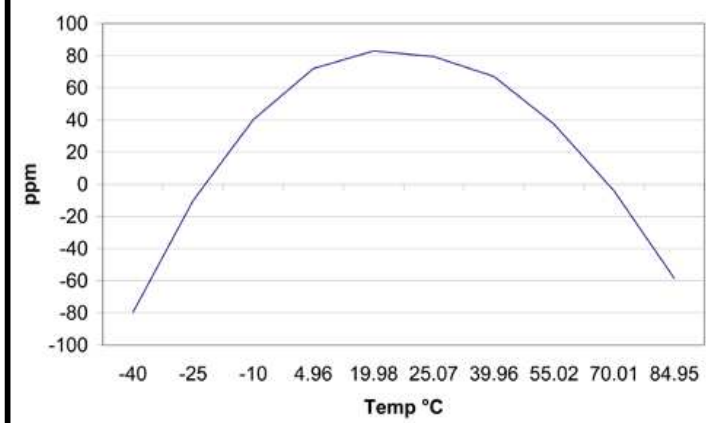
### RECOMMENDED REFLOW SOLDERING PROFILE



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



### Frequency vs Temperature



| 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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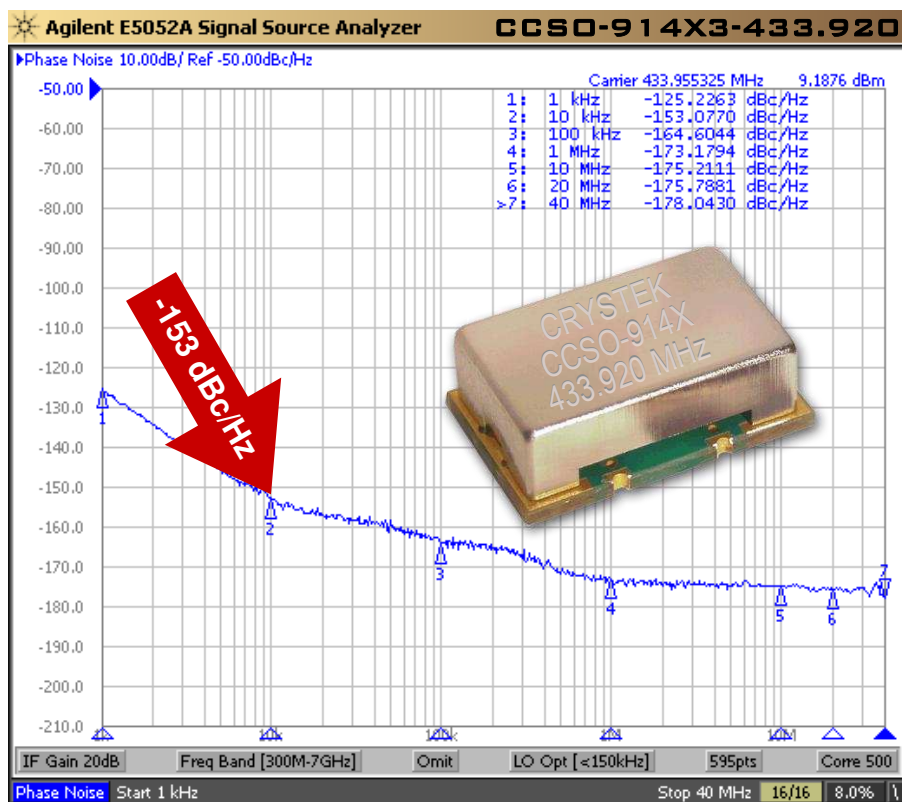
**CRYSTEK**  
CORPORATION

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