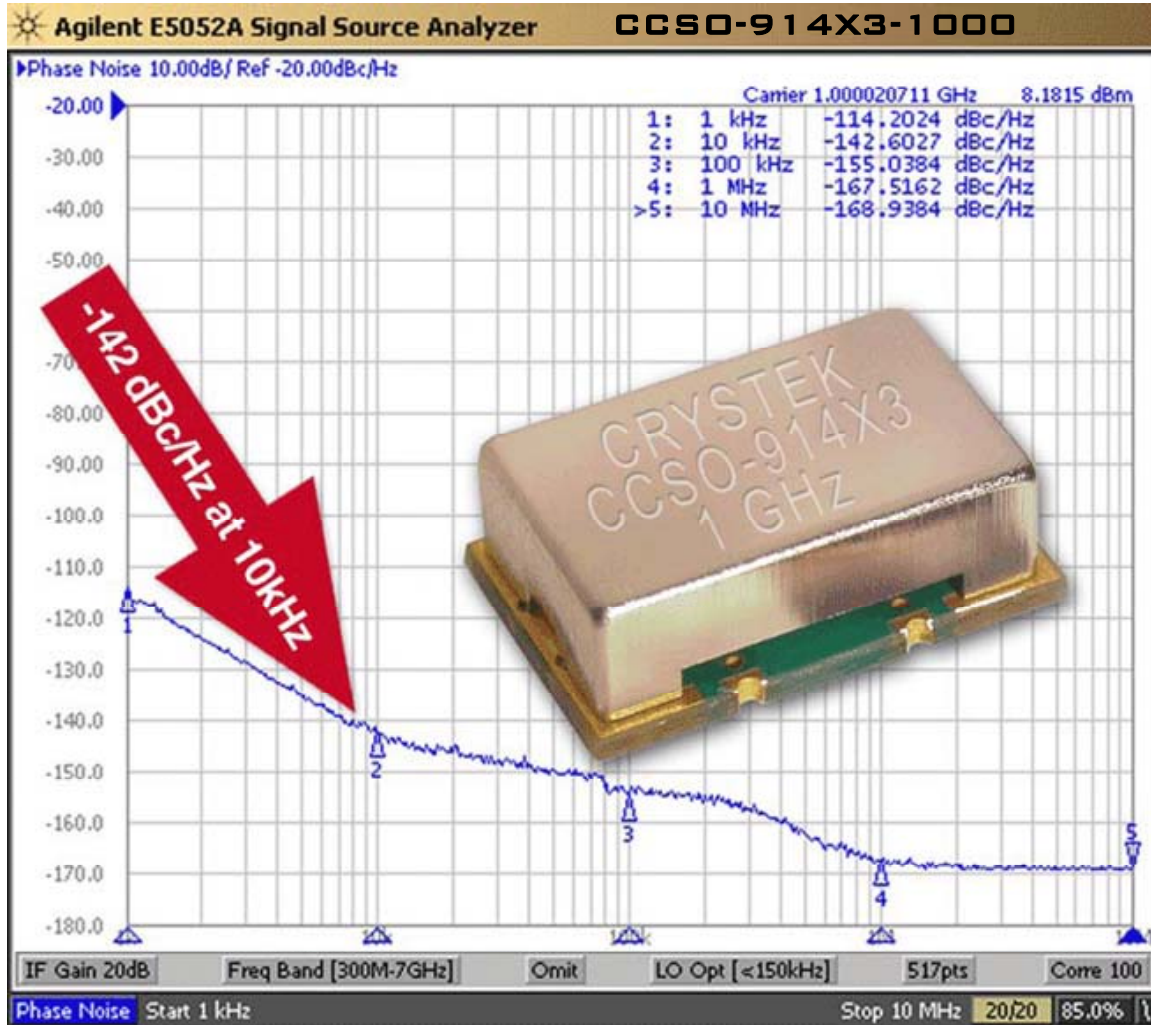


*Ultra-Low Phase Noise 1GHz SAW Clock*



Model CCSO-914X3-1000 is a 1 GHz SAW (surface acoustic wave) Clock Oscillator (CCSO). SAW crystal technology provides low-noise and low-jitter performance with true sinewave output. Features include -142dBc/Hz phase noise at 10kHz offset, 3.3V input voltage, -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 -25dBc.

**Applications include:**

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-914X3-1000  
True SineWave  
SAW Based Clock Oscillator  
9×14mm SMD  
3.3 Volt

**Frequency:** 1 GHz  
**Temperature Range:** -40°C to +85°C  
**Storage:** -45°C to 90°C  
**Input Voltage:** 3.3V ± 0.15V

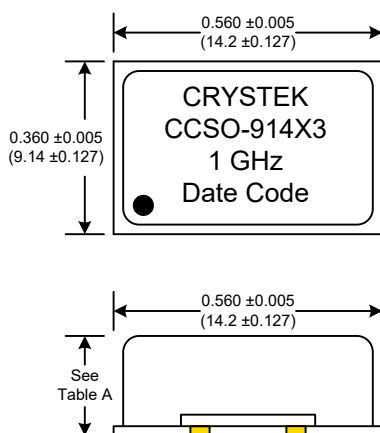
**Frequency vs Temperature:** ±150ppm Typical  
**Input Current:** 25mA Typical, 35mA Max  
**Output:** True SineWave  
**Output Power:** +5dBm Min into 50 Ω Load  
**Start-Up Time:** 2ms Typical, 10ms Max  
**2<sup>nd</sup> Harmonic:** -20dBc Typical  
**Sub-Harmonics:** None  
**Jitter:**

**SONET OC-48(12kHz~80MHz)** 0.18ps RMS Typical, 0.20ps RMS Max  
**SONET OC-192(50kHz~80MHz)** 0.12ps RMS Typical, 0.15ps RMS Max

**Phase Noise Typical:**

|        |             |
|--------|-------------|
| 1kHz   | -112 dBc/Hz |
| 10kHz  | -142 dBc/Hz |
| 100kHz | -155 dBc/Hz |
| 1MHz   | -167 dBc/Hz |
| 10MHz  | -168 dBc/Hz |

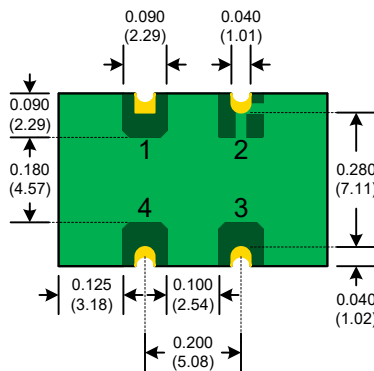
**G-sensitivity:** 0.9×10<sup>-9</sup> per g



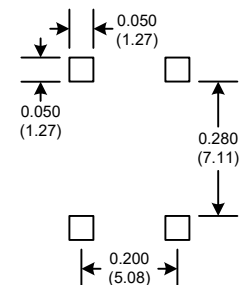
Package Height Options

|          | inches | mm   |
|----------|--------|------|
| Standard | 0.210  | 5.33 |
| Option L | 0.135  | 3.43 |

Table A



**SUGGESTED PAD LAYOUT**

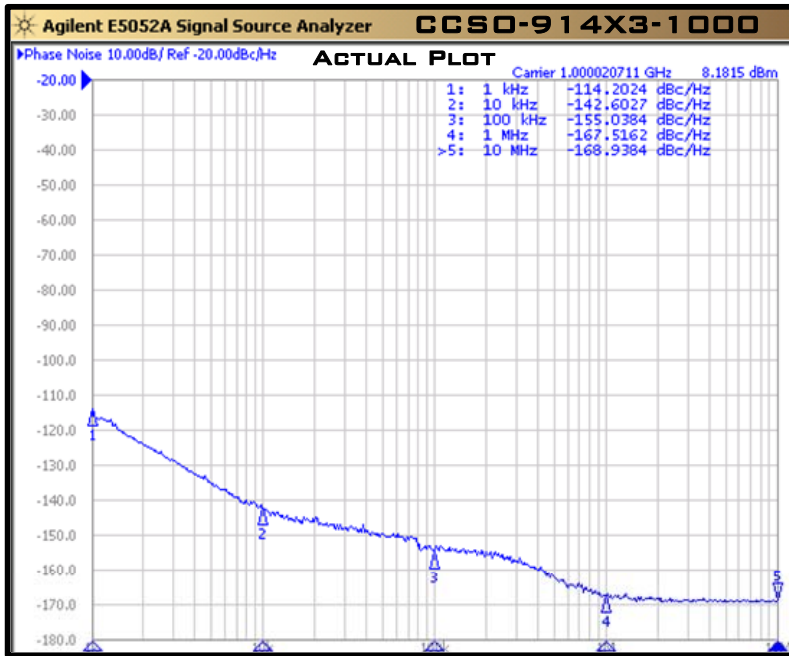


**PAD FINISH:** Immersion Gold (ENIG); 5 micro inches maximum

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

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CCSO-914X3-1000  
True SineWave  
SAW Based Clock Oscillator  
9×14mm SMD  
3.3 Volt

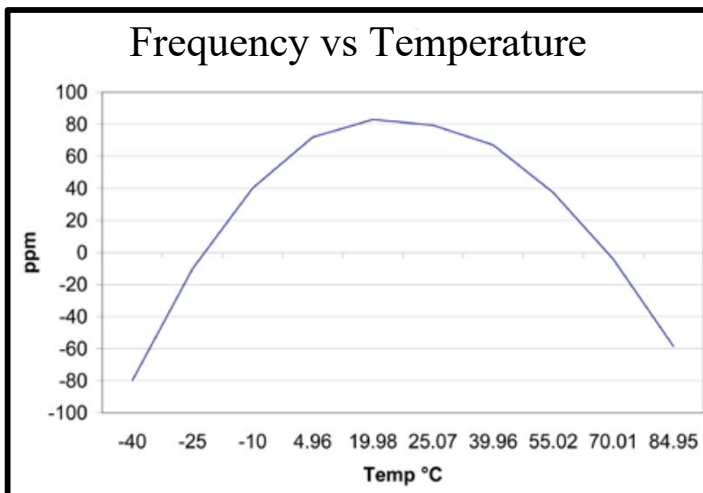


**Crystek Part Number Guide**

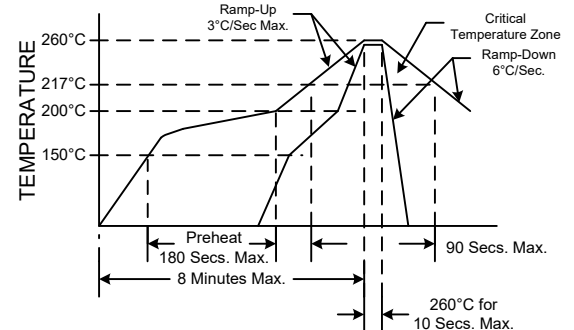
CCSO - 914X3 L - 1000

#1 #2 #3

#1 Crystek Saw Osc.  
#2 Model 914 with -40/85°C Temperature Range  
#3 Height (L = 0.135") (Blank = 0.210")



**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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No liability is assumed as a result of its use or application.

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