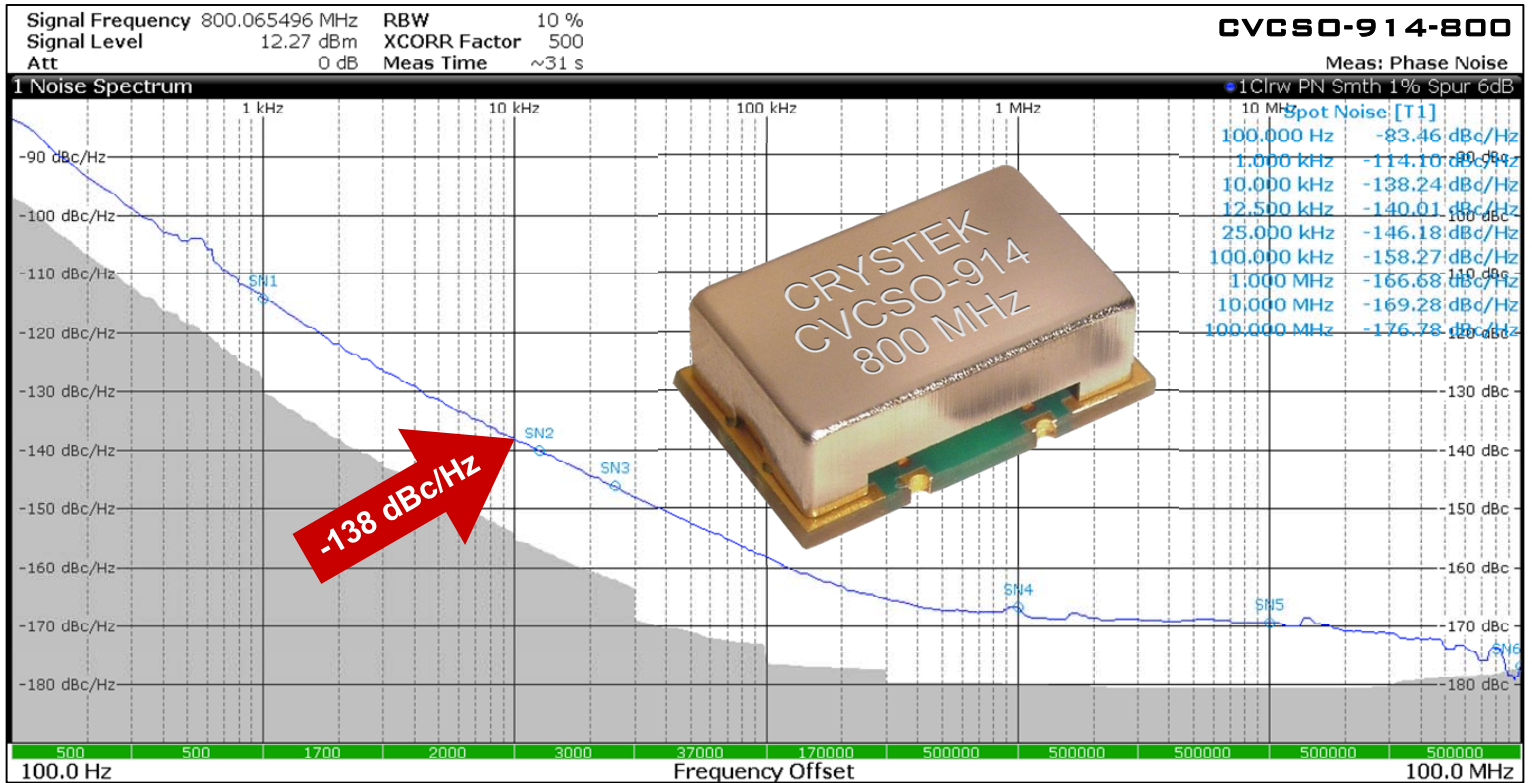


# Ultra-Low Phase Noise True SineWave SAW Based VCISO

**CVCSO-914 Model**  
9×14 mm SMD, 5.0V, SineWave



Model CVCSO-914 is a voltage-controlled SAW (surface acoustic wave) Clock Oscillator (VCISO). 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 at 1 GHz, 5V 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.

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# Ultra-Low Phase Noise True SineWave SAW Based VCISO

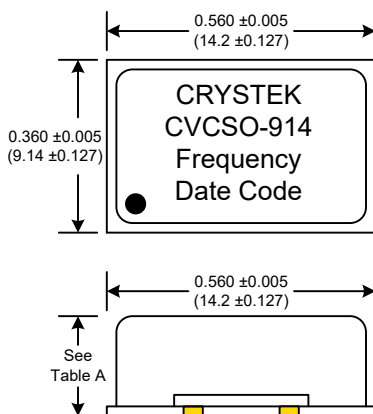
**CVCSO-914 Model**  
9×14 mm SMD, 5.0V, SineWave

|                                       |                                |
|---------------------------------------|--------------------------------|
| <b>Frequency Range:</b>               | <b>500.000 MHz to 1000 MHz</b> |
| <b>Temperature Range:</b>             | <b>0°C to +70°C</b>            |
| <b>CVCSO-914A option</b>              | <b>0°C to +50°C</b>            |
| <b>CVCSO-914M option</b>              | <b>-20°C to +70°C</b>          |
| <b>CVCSO-914X option</b>              | <b>-40°C to +85°C</b>          |
| <b>Storage:</b>                       | <b>-40°C to 90°C</b>           |
| <b>Input Voltage:</b>                 | <b>5.0V ±0.25V</b>             |
| <b>Control Voltage Range:</b>         | <b>0V to 5.0V</b>              |
| <b>Tuning Sensitivity (Kv):</b>       | <b>+120 ppm/V Typical</b>      |
| <b>Settability At Nominal (25°C):</b> | <b>1.5V +0.5V -1.0V</b>        |
| <b>Frequency vs Temperature:</b>      | <b>±200ppm Typical</b>         |
| <b>Input Current:</b>                 | <b>25mA Typical, 35mA Max</b>  |



|                                 |                                   |
|---------------------------------|-----------------------------------|
| <b>Output:</b>                  | <b>True SineWave</b>              |
| <b>Pullability APR:</b>         | <b>±50ppm Min</b>                 |
| <b>Linearity:</b>               | <b>±20% Max</b>                   |
| <b>Output Power:</b>            | <b>+10dBm Min into 50 Ω Load</b>  |
| <b>Start-Up Time:</b>           | <b>2ms Typical, 10ms Max</b>      |
| <b>2<sup>nd</sup> Harmonic:</b> | <b>-20dBc Typical, -15dBc Max</b> |
| <b>Sub-Harmonics:</b>           | <b>None</b>                       |
| <b>Modulation BW:</b>           | <b>&gt;20kHz @ -3dB</b>           |

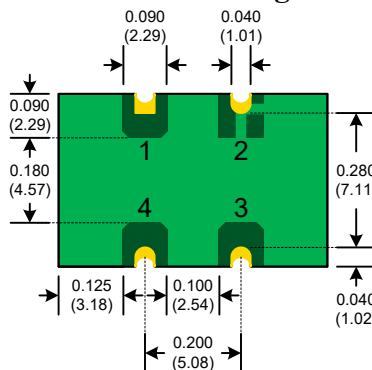
**G-sensitivity:** **0.9×10<sup>-9</sup> per G**  
**Weight:** **0.816 g**



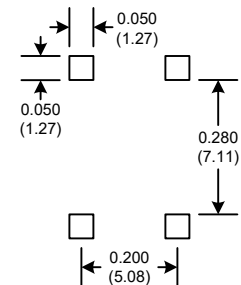
Package Height Options (Max)

|          | 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   | Volt. Control |
| 2   | GND           |
| 3   | Output        |
| 4   | Vdd           |

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# Ultra-Low Phase Noise True SineWave SAW Based VCISO

**CVCSO-914 Model**  
9x14 mm SMD, 5.0V, SineWave

### Crystek Part Number Guide

CVCSO - 914 X L - 640.000

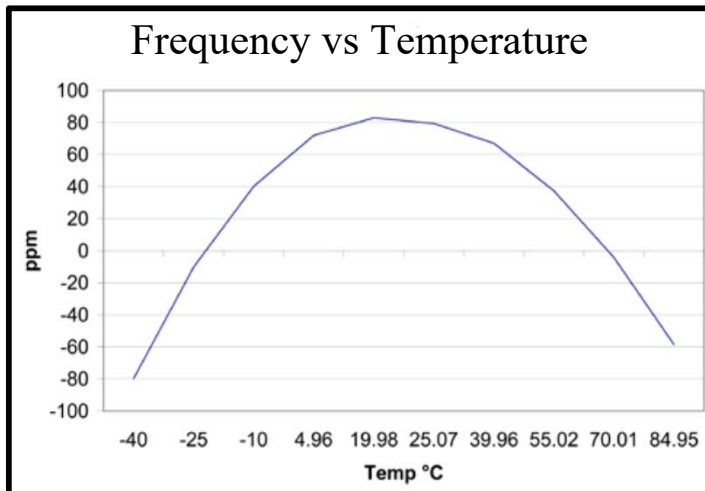
#1 #2 #3 #4 #5

- #1 Crystek Saw Voltage Controlled Oscillator
- #2 Model 914
- #3 Temperature Range (X = -40/85°C) (M = -20/70°C)  
(Blank = 0/70°C)
- #4 Height (L = 0.135") (Blank = 0.210")
- #5 Frequency in MHz: 3 or 6 decimal places

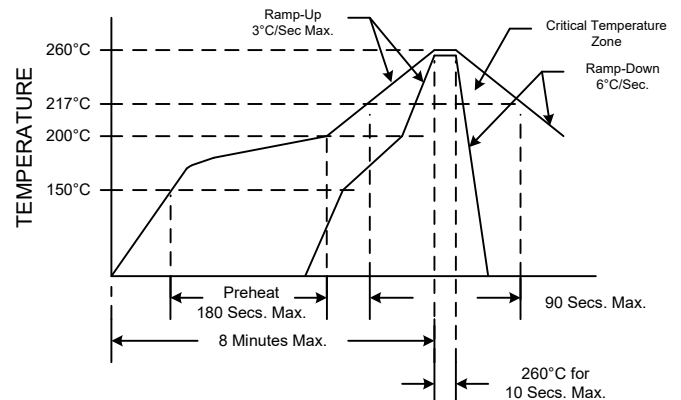
Available Frequencies (MHz):

|         |          |
|---------|----------|
| 640.000 | 916.000  |
| 800.000 | 1000.000 |
| 840.000 |          |

Custom Frequencies Available with NRE Fee



### RECOMMENDED REFLOW SOLDERING PROFILE



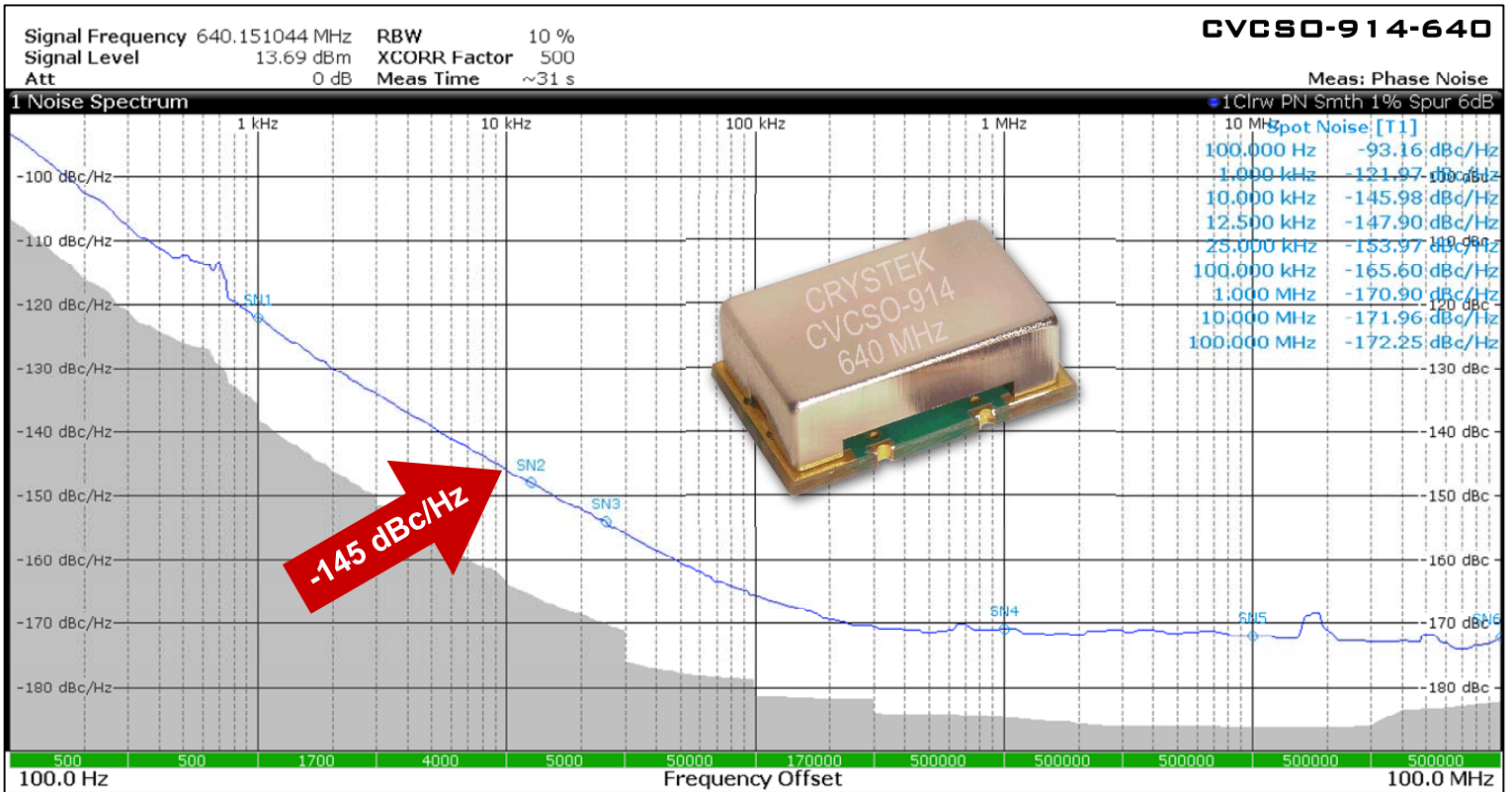
| Parameter                    | Conditions                                |
|------------------------------|---|
| Mechanical Shock             | MIL-STD-883, Method 2002, Condition B     |
| Mechanical Vibration         | MIL-STD-883, Method 2007, Condition A     |
| Solderability                | 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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# Ultra-Low Phase Noise True Sine Wave SAW Based VCISO

**CVCSO-914 Model**  
9x14 mm SMD, 5.0V, SineWave



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