Model CVCSO-914SXT is a 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 -133 dBC/Hz phase noise at 10 kHz offset at 1.6 GHz, 5V input voltage, -20°C to +70°C operating temperature, and 9×14 mm SMT package. The oscillator’s second harmonic is typically -20 dBC.

Applications include PLL frequency translation, test and measurement, avionics, point-to-point radios, and multi-point radios.
Ultra-Low Phase Noise
Frequency Doubling
SAW Based VCSO

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

- Frequency Range: 1244.160 MHz to 2000 MHz
- Temperature Range: -20°C to +70°C (standard)
  (Option E): 0°C to 85°C
  (Option X): -40°C to 85°C
- Storage: -40°C to 90°C
- Input Voltage: 5.0V ±0.25V
- Control Voltage Range: 0V to 5.0V
- Tuning Sensitivity (Kv): +120 ppm/V Typical
- Settability At Nominal (25°C): ±200ppm Typical
- Frequency vs Temperature: ±200ppm Typical
- Input Current: 60mA Typical, 70mA Max

Output:
- Pullability APR: True SineWave
- Linearity: ±50ppm Min
- Output Power: ±20% Max
- Start-Up Time: +8dBm Min into 50 Ω Load
- 2nd Harmonic: 2ms Typical, 10ms Max
- (Nominal Frequency)/2: >20kHz @ -3dB
- Modulation BW:
- G-sensitivity: 0.9×10⁻⁹ per G
- Weight: 0.816 g

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<table>
<thead>
<tr>
<th>Pad</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Volt. Control</td>
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<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>Output</td>
</tr>
<tr>
<td>4</td>
<td>Vdd</td>
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</tbody>
</table>

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

SUGGESTED PAD LAYOUT

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Table A

<table>
<thead>
<tr>
<th>Package Height Options (Max)</th>
<th>inches</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.210</td>
<td>5.33</td>
</tr>
<tr>
<td>Option L</td>
<td>0.135</td>
<td>3.43</td>
</tr>
</tbody>
</table>

Rev: H
Date: 20-Aug-2020
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SUGGESTED PAD LAYOUT

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

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Table A
CVCSO-914SXT Model
9×14 mm SMD, 5.0V, SineWave

Ultra-Low Phase Noise
Frequency Doubling
SAW Based VCSO

- Available Frequencies (MHz):
  - 1244.160
  - 1600
  - 1500
  - 2000

- Custom Frequencies Available with NRE Fee

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Vibration</td>
<td>MIL-STD-883, Method 2007, Condition A</td>
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<tr>
<td>Solderability</td>
<td>MIL-STD-883, Method 2003</td>
</tr>
<tr>
<td>Solvent Resistance</td>
<td>MIL-STD-202, Method 215</td>
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<tr>
<td>Resistance to Soldering Heat</td>
<td>MIL-STD-202, Method 210, Condition I or J</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td>MIL-STD-883, Method 1011, Condition A</td>
</tr>
<tr>
<td>Moisture Resistance</td>
<td>MIL-STD-883, Method 1004</td>
</tr>
</tbody>
</table>

Crystek Part Number Guide
CVCSO - 914SXT X L - 1500.000
#1 Crystek Voltage Control Saw Oscillator
#2 Model 914SXT
#3 Temperature Range (Blank = -20°C to 70°C)
  (E = 0°C to 85°C)
  (X = -40°C to 80°C)
#4 Height (L = 0.135") (Blank = 0.210")
#5 Frequency in MHz: 3 or 6 decimal places

RECOMMENDED REFLOW SOLDERING PROFILE

- 217°C
- 200°C
- 260°C
- 150°C
- Ramp-Up
  3°C/Sec Max.
- Critical Temperature Zone
- Ramp-Down
  6°C/Sec.
- Preheat
  180 Secs. Max.
- 8 Minutes Max.
- 260°C for 10 Secs. Max.

NOTE: Reflow Profile with 240°C peak also acceptable.
Ultra-Low Phase Noise  
Frequency Doubling  
SAW Based VCSO  

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

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