Model CVCSO-914-1000 is a 1 GHz 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 -138 dBc/Hz phase noise at 10 kHz offset, 5V input voltage, -20°C to +70°C operating temperature, and 9×14 mm SMT package. The CVCSO-914X offers an operating temperature range of -40°C to +85°C. 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.
CVCSO-914-1000 Model
9×14 mm SMD, 5.0V, SineWave

1GHz SAW Based VCSO

Frequency: 1 GHz
Temperature Range: -20°C to +70°C
CVCSO-914X-1000 option -40°C to +85°C
Storage: -40°C to 90°C
Input Voltage: 5.0V ±0.25V
Control Voltage Range: 0V to 5.0V
Settability At Nominal (25°C): +0.5V to 2.0V
Tuning Sensitivity (Kv): +120ppm/V
Frequency vs Temperature: ±200ppm Typical
Input Current: 25mA Typical, 35mA Max

Output: True SineWave
Pullability APR: ±50ppm Min
Linearity: ±20% Max
Output Power: +10dBm Min into 50 Ω Load
Start-Up Time: 2ms Typical, 10ms Max
2nd Harmonic: -20dBc Typical, -15dBc Max
Sub-Harmonics: None
Modulation BW: >20kHz @ -3dB
Phase Noise Typical:
1kHz -110 dBc/Hz
10kHz -139 dBc/Hz
100kHz -160 dBc/Hz
1MHz -170 dBc/Hz
10MHz -174 dBc/Hz
G-sensitivity: 0.9×10⁻⁹ per g

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

PAD LAYOUT

SUGGESTED PAD LAYOUT

1 2 3 4
Volt. Control GND Output Vdd

Table A

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

Package Height Options (Max)

<table>
<thead>
<tr>
<th>inches</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.210</td>
</tr>
<tr>
<td>Option L</td>
<td>0.135</td>
</tr>
</tbody>
</table>

Revision: AB
Date: 13-Jul-2020
Page 2 of 3
Ultra-Low Phase Noise
True SineWave
1GHz, SAW Based VCSO

Crystek Part Number Guide

<table>
<thead>
<tr>
<th>CVCSO - 914 X L - 1000.000</th>
</tr>
</thead>
</table>

#1 Crystek Saw Voltage Controlled Oscillator
#2 Model 914
#3 Temperature Range (X = -40/85°C) (Blank = -20/70°C)
#4 Height (L = 0.135") (Blank = 0.210")

RECOMMENDED REFLOW SOLDERING PROFILE

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>260°C</td>
<td>90 Secs. Max.</td>
</tr>
<tr>
<td>200°C</td>
<td>8 Minutes Max.</td>
</tr>
<tr>
<td>150°C</td>
<td>Preheat 180 Secs. Max.</td>
</tr>
<tr>
<td>217°C</td>
<td>Ramp-Up 3°C/Sec Max.</td>
</tr>
<tr>
<td>260°C</td>
<td>Ramp-Down 6°C/Sec.</td>
</tr>
</tbody>
</table>

Critical Temperature Zone

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

TAPE AND REEL

Denotes Pin 1

Pocket Depth = 0.209 (5.30)

Drawing not to scale.

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