CVPD-970 Model
9x14 mm SMD, 3.3V, LVPECL

Frequency Range: 622.080 MHz to 670 MHz
Frequency Stability: ±25ppm
Temperature Range: 0°C to 70°C
(Option X)
-40°C to 85°C
Storage: -45°C to 90°C
Input Voltage: 3.3V ±0.3V
Control Voltage: 1.65V ±1.65V
Input Current: 80mA Max

Output: Differential LVPECL
Symmetry: 49/51% Typical, 45/55% Max @ zero crossing point
Rise/Fall Time: 0.4ns Max (20% to 80%)
Pullability APR: ±50ppm Min
Linearity: ±10% Max
Load: Terminated to Vdd-2V into 50 ohms
Logic "1" Level: Vcc-0.96V Min, Vcc-0.81V Max
Logic "0" Level: Vcc-1.85V Min, Vcc-1.65V Max
Disable Time: 100ns Max
Start-up Time: 2ms Typical, 10ms Max

Modulation BW: >10kHz @ -3dB
Sub-harmonics: -40dBc

Period Jitter: (20,000 periods) <5ps RMS (1-sigma) Max
Phase Jitter: 12kHz~20MHz <1ps RMS (1-sigma) Max
50kHz~80MHz <1ps RMS (1-sigma) Max

Phase Noise Typical: 100Hz -80 dBc/Hz
1kHz -108 dBc/Hz
10kHz -132 dBc/Hz
100kHz -140 dBc/Hz

Aging: <3ppm 1st year, <2ppm every year thereafter

Applications:
10 Gigabit Ethernet
OC48: Forward Error Correction
Broadband Networks
SONET/SDH/DWD
ATM
Network/switch
Telecom

Designed using FR5 PCB & HFF crystal technology to provide a Low Noise, Low Jitter Voltage Controlled Clock Oscillator solution at a competitive price.

Specifications subject to change without notice.

Rev: G
Date: 15-Sep-2017
Page 1 of 2
Differential LVPECL VCXO

**CVPD-970 Model**
9×14 mm SMD, 3.3V, LVPECL

**Crystek Part Number Guide**

<table>
<thead>
<tr>
<th>CVPD - 970 - X - 622.080</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Crystek 9×14 SMD PECL VCXO</td>
</tr>
<tr>
<td>#2 Model 970 = High Frequency 3.3V</td>
</tr>
<tr>
<td>#3 Temp. Range: Blank = 0/70°C, X = -40/85°C</td>
</tr>
<tr>
<td>#4 Frequency in MHz: 3 or 6 decimal places</td>
</tr>
</tbody>
</table>

Example: CVPD-970X-622.080 = 3.3V, -40/85°C, 622.080 MHz

**Standard Frequencies MHz**

| 622.080 | 666.514300 |
| 625.000 | 669.128100 |
| 644.513000 | 669.326500 |

**RECOMMENDED REFLOW SOLDERING PROFILE**

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

Critical Temperature Zone Ramp-Down 6°C/Sec.

260°C for 10 Secs. Max.

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

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

**Enable/Disable Function**

<table>
<thead>
<tr>
<th>Pin 2</th>
<th>Output pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>Active</td>
</tr>
<tr>
<td>&quot;0&quot; level Vcc-1.620V Max</td>
<td>Active</td>
</tr>
<tr>
<td>&quot;1&quot; level Vcc-1.025V Min</td>
<td>Disabled</td>
</tr>
</tbody>
</table>

**Disabled State:**

Pin 4 will assume a fixed level of logic "0"  
Pin 5 will assume a fixed level of logic "1"

**SUGGESTED PAD LAYOUT**

**Mechanical:**

**Shock:** MIL-STD-883, Method 2002, Condition B  
**Solderability:** MIL-STD-883, Method 2003  
**Vibration:** MIL-STD-883, Method 2007, Condition A  
**Solvent Resistance:** MIL-STD-202, Method 215  
**Resistance to Soldering Heat:** MIL-STD-202, Method 210, Condition I or J

**Environmental:**

**Thermal Shock:** MIL-STD-883, Method 1011, Condition A  
**Moisture Resistance:** MIL-STD-883, Method 1004

**Packaging:**

**Tape/Reel:** 100ea, 250ea, 500ea  24mm Tape

Specifications subject to change without notice.

**Rev:** G  
**Date:** 15-Sep-2017  
Page 2 of 2