**CVHD-965 Model**

9×14 mm SMD, 5V, HCMOS

- **Frequency Range:** 14 MHz to 49.152 MHz
- **Frequency Stability:** ±30ppm
- **Frequency Pulling:** ±100ppm Min (Std), ±150ppm Min (Option A), ±200ppm Min (Option B)
- **Temperature Range:** 0°C to 70°C (Option M), -20°C to 70°C (Option X), -40°C to 85°C (Option A), -45°C to 90°C (Option B)
- **Storage:** -45°C to 90°C
- **Input Voltage:** 5V ±0.5V
- **Control Voltage:** 2.5V ±2.0V
- **Input Current:** 30mA Typical, 50mA Max
- **Output:** HCMOS
- **Symmetry:** 45/55% Max @ 50% Vdd
- **Rise/Fall Time:** 3ns Max @ 20% to 80% Vdd
- **Linearity:** "0" = 10% Vdd Max, "1" = 90% Vdd Min
- **Load:** 30pF
- **Jitter:** 12kHz to 80MHz
- **Phase Noise Floor:** -160 dBc/Hz Typical, -155 dBc/Hz Max Guaranteed
- **Sub-Harmonics:** None
- **Aging:** <3ppm 1st year, <1ppm every year thereafter

**Design**

Designed using fundamental UM-1 crystal to achieve Low Jitter and High Pull performance. Perfect for any application requiring high pull but extremely low jitter. Available in 3.3 Volt version, see CVHD-960 Model.

**Recommended Reflow Soldering Profile**

- Preheat: 180 Secs. Max
- Ramp-Up: 3°C/Sec Max
- Critical Temperature Zone: Ramp-Down 6°C/Sec
- Critical Temperature Zone: 260°C for 10 Secs. Max

**Suggested Pad Layout**

**Crystek Part Number Guide**

**CVHD - 965 - X - X - 16.384**

<table>
<thead>
<tr>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
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</thead>
<tbody>
<tr>
<td>Crystek SMD HCMOS Osc.</td>
<td>Model 965 = 9×14mm smd 4pad 5.0V</td>
<td>Temp. Range: Blank = 0/70°C, X= -20/70°C, X= -40/85°C</td>
<td>Frequency Pulling: (see Table 1)</td>
<td>Frequency in MHz: 3 or 6 decimal places</td>
</tr>
</tbody>
</table>

**Examples:**

- CVHD-965B-49.152 = 5.0V, 45/55, 0/70°C, 200ppm, 16.384 MHz
- CVHD-965MA-49.152 = 5.0V, 45/55, -20/70°C, 150ppm , 16.384 MHz

**Table 1**

<table>
<thead>
<tr>
<th>PIN</th>
<th>Function</th>
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<tbody>
<tr>
<td>1</td>
<td>Volt Cont.</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>OUT</td>
</tr>
<tr>
<td>4</td>
<td>Vdd</td>
</tr>
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