



**CRYSTEK**  
**CRYSTALS**  
A DIVISION OF CRYSTEK CORPORATION

CCPD-034 LVPECL  
Clock Oscillator  
5x7mm SMD  
3.3 Volts



**Model CCPD-034 is a 162.000MHz to 312.500MHz LVPECL Clock Oscillator operating at 3.3Volts. The oscillator utilizes a High Q Third Overtone crystal design providing very low Jitter and Phase Noise. No Sub-Harmonics are present in the Output Signal.**



5x7mm SMD

### **Applications:**

**Digital Video  
SONET/SDH/DWDM  
Storage Area Networks  
Broadband Access  
Ethernet, Gigabit Ethernet**



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### CCPD-034 LVPECL Clock Oscillator 5x7mm SMD 3.3 Volts



**Frequency Range:** 162.000MHz to 312.500MHz  
**Frequency Stability Options(ppm):** ±20, ±25, ±50, ±100

**Temperature Range: (standard)** 0°C to +70°C  
 (Option M) -20°C to +70°C  
 (Option X) -40°C to +85°C

**Storage:** -55°C to 120°C  
**Input Voltage:** 3.3V ± 0.3V  
**Input Current:** 55mA Typ., 88mA Max

**Output:** Differential LVPECL  
**Symmetry:** 45/55% Max @ 50% Vdd  
**Rise/Fall Time:** 1nsec Max @ 20% to 80% Vdd

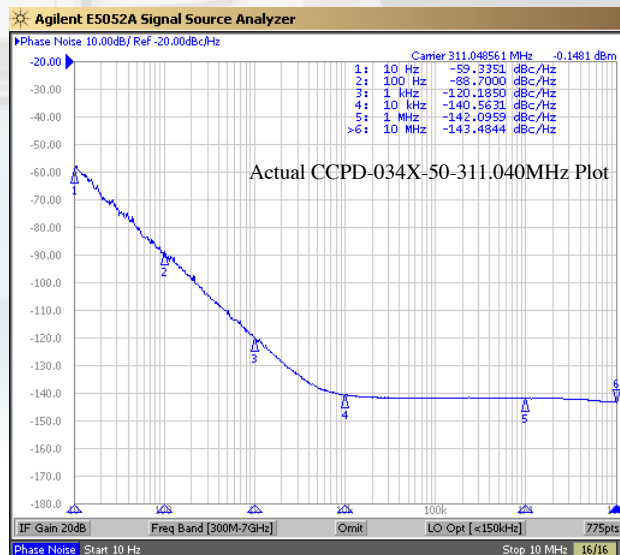
**Logic:** Terminated to Vdd-2V into 50 ohms  
**Temp. 0°C to 85°C** "0"=1.490 Min., 1.680 Max  
 "1"=2.275 Min., 2.420 Max  
**Temp. -40°C to 0°C** "0"=1.470 Min., 1.745 Max  
 "1"=2.215 Min., 2.420 Max  
**Disable Time** 200nSec Max  
**Start-up Time** 1mSec Typ., 2mSec Max

**Phase Jitter:** 12KHz~80MHz 0.5psec Typ., 1psec RMS Max

**Phase Noise:** (See Plot Below)

**Sub-harmonics:** None

**Aging:** <3ppm 1<sup>st</sup> year, <2ppm every year thereafter





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#### PART NUMBER GUIDE

CCPD - 034 X - 50 - 311.040

- #1 Crystek PECL Oscillator.
- #2 Model 034
- #3 Temp. Range (Blank=0/70°C)(M=-20/70°C)(X=-40/85°C)
- #4 Stability: (see Table 1)
- #5 Frequency in MHz: 3 or 6 decimal places

Example:

CCPD-034X-50-311.040

3.3V, -40/85°C, ±50ppm, 311.0400 MHz

Stability Indicator	
Blank(std)	±100ppm
50	±50ppm
25	±25ppm
20	±20ppm

**Table 1**

#### Standard Frequencies

- (±50ppm, 0/70°C)
- 200.000MHz
- 212.500MHz
- 250.000MHz
- 311.040MHz
- 312.500MHz

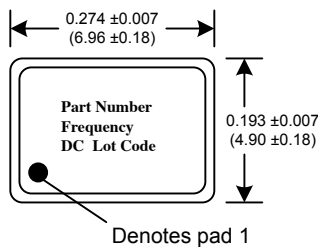
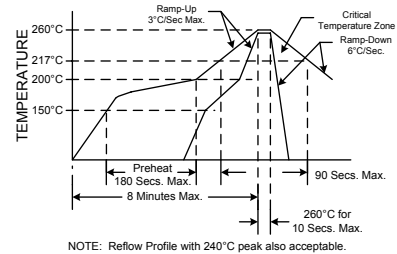
#### Mechanical:

- 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

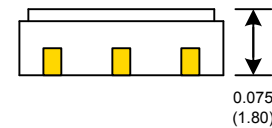
#### Environmental:

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

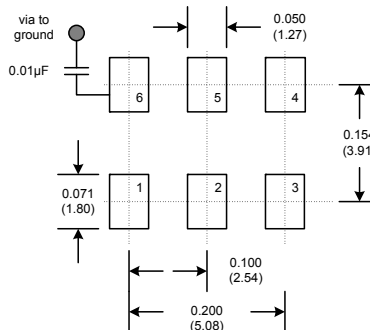
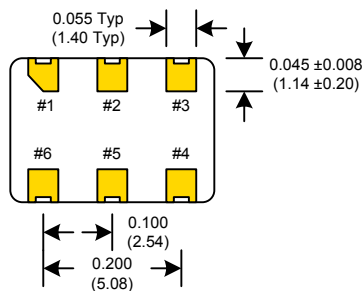
#### RECOMMENDED REFLOW SOLDERING PROFILE



Dimensions inches (mm)  
All dimensions are Max unless otherwise specified.



#### SUGGESTED PAD LAYOUT



#### Tri-State Function

Pin #1 State	Output State
Open or N/C	Active
"1" level 0.7*Vcc Min	Active
"0" level 0.3*Vcc Max	High Z

Pad	Connection
1	Enable/Disable
2	N/C
3	GND
4	Out
5	Comp. Out
6	VCC