



CRYSTEK
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A DIVISION OF CRYSTEK CORPORATION

**CCLD-023 5x7mm SMD
LVDS Clock Oscillator
2.5 Volts**



Model CCLD-023 is a 77.760Mhz to 161.000MHz LVDS Clock Oscillator operating at 2.5Volts. 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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Frequency Range: 77.760Mhz to 161.000Mhz
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: 2.5V ± 0.125V
Input Current: 43mA Typ., 63mA Max

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

Load: 100 Ohms **Connected between OUT and COUT**

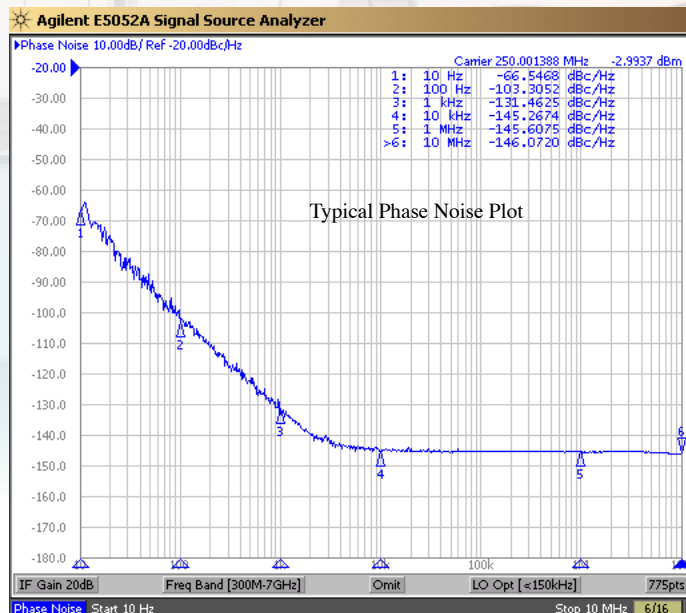
Logic: Output Voltage Levels "0"=0.90 Min., 1.10 Typ.
 "1"=1.43 Typ., 1.60 Max

Differential Output Voltage: 247mV Min., 454mV Max
Disable Time 200nSec Max
Enable Time 2mSec Max

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

Phase Noise: (See Plot Below) **None**

Sub-harmonics: None
Aging: <3ppm 1st/yr, <1ppm every year thereafter





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PART NUMBER GUIDE

CCLD - 023 X - 50 - 155.520
 #1 #2 #3 #4 #5

- #1 Crystek LVDS Osc.
- #2 Model 023
- #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:

CCLD-023X-50-155.520

2.5V, -40/85°C, ±50ppm, 155.520 MHz

Stability Indicator

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

Table 1

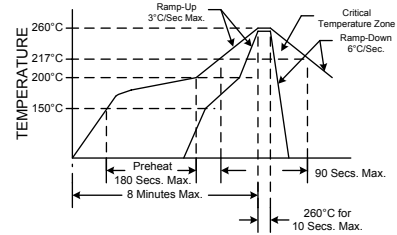
Mechanical:

- 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:

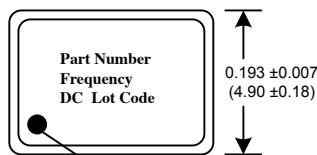
- Thermal Shock:** MIL-STD-883, Method 1011, Condition A
- Moisture Resistance:** MIL-STD-883, Method 1004

RECOMMENDED REFLOW SOLDERING PROFILE

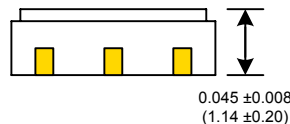
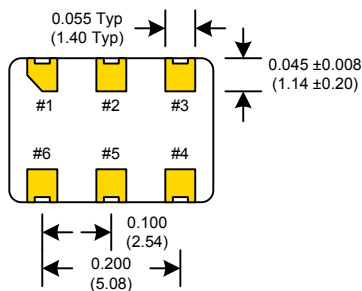


NOTE: Reflow Profile with 240°C peak also acceptable.

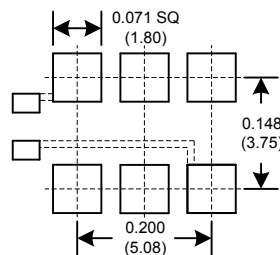
0.274 ±0.007
(6.96 ±0.18)



Denotes pad 1



SUGGESTED PAD LAYOUT



0.01uF Bypass Capacitor Recommended

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