



CRYSTEK
CRYSTALS
A DIVISION OF CRYSTEK CORPORATION

**CCLD-033 5x7mm SMD
LVDS Clock Oscillator
3.3 Volts**



Model CCLD-033 is a 77.760Mhz to 161.000MHz LVDS 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**

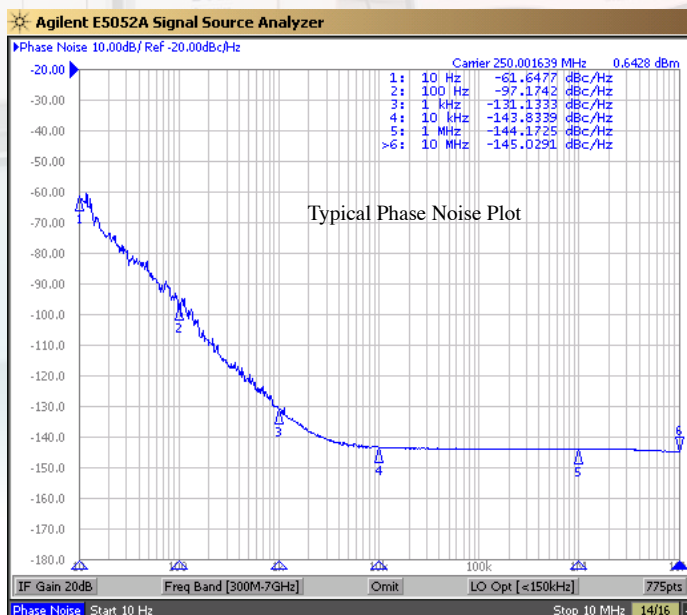


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CCLD-033 5x7mm SMD LVDS Clock Oscillator



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:	3.3V ± 0.3V
Input Current:	45mA Typ., 66mA 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
Phase Noise:	(See Plot Below)
Sub-harmonics:	0.5psec Typ., 1psec RMS Max
Aging:	None
	<3ppm 1st/yr, <1ppm every year thereafter



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Rev.: E
Date: 01-21-09



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CCLD-033 5x7mm SMD LVDS Clock Oscillator



PART NUMBER GUIDE

CCLD - 033 X - 50 - 155.520

#1 #2 #3 #4 #5

#1 Crystek LVDS Osc.

#2 Model 033

#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-033X-50-155.520

3.3V, -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

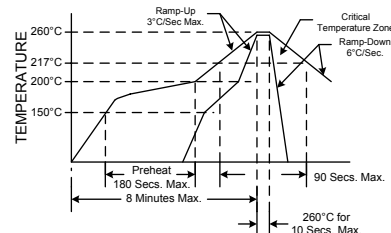
Resistance to Soldering Heat: MIL-STD-202, Method 210, Condition I or J

Environmental:

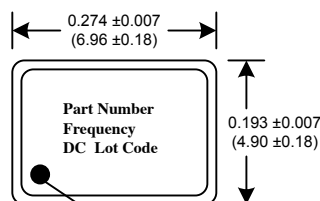
Thermal Shock: MIL-STD-883, Method 1011, Condition A

Moisture Resistance: MIL-STD-883, Method 1004

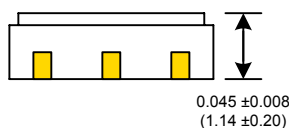
RECOMMENDED REFLOW SOLDERING PROFILE



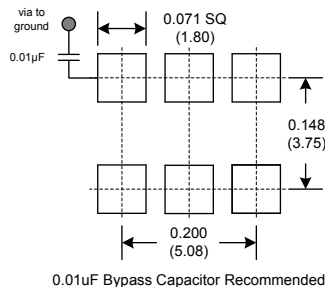
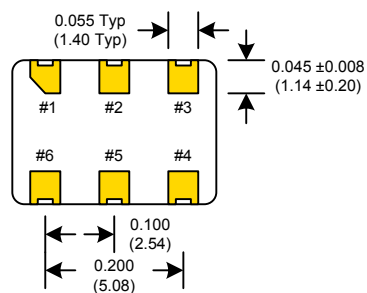
NOTE: Reflow Profile with 240°C peak also acceptable.



Denotes pad 1



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



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