

3.3V LVDS Low Jitter XO

**LD**



5.0 x 3.2mm Ceramic SMD

**Product Features**

- 38.88 to 162 MHz Frequency Range
- <1 ps RMS jitter with non-PLL design
- Designed for standard reflow & washing techniques
- IBIS models available
- Pb-free & RoHS/Green compliant

**Product Description**

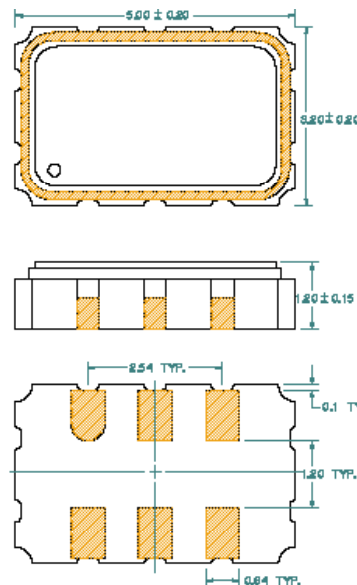
The LD Series 3.3V crystal clock oscillator achieves superb jitter and stability over a broad range of operating conditions and frequencies. The output clock signal, generated internally with a non-PLL oscillator design, is compatible with LVDS logic levels. The device, available on tape and reel, is contained in a 5.0 x 3.2mm surface-mount ceramic package.

**Applications**

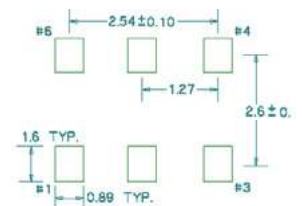
The LD Series is ideal for high-speed applications requiring low jitter, including:

- 1/10 Gigabit Ethernet
- 2/4/10G FibreChannel
- Serial Attached SCSI (SAS)
- Server & Storage platforms
- SONET/SDH linecards
- Passive Optical Network (PON) devices
- HD Video Systems

**Package:**



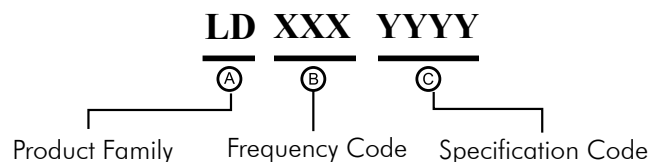
Recommended Land Pattern:



**Pin Functions:**

Pin	Function
1	OE or NC
2	NC or OE
3	Ground
4	Q Output
5	$\bar{Q}$ Output
6	V <sub>CC</sub>

**Part Ordering Information:**



Following the above format, Saronix-eCera part numbers will be assigned upon confirmation of exact customer requirements.

### Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency	38.88		162	MHz	As specified
Supply Voltage	3.0	3.3	3.6	V	
Supply Current, Enabled		35	47	mA	
Supply Current, Disabled			0.03	mA	
Frequency Stability			±20 to ±50	ppm	See Note 1 below
Operating Temperature Range	-20		+70	°C	Commercial (standard)
	-40		+85		Industrial (standard)
Output Logic 0, V <sub>OL</sub>	0.9	1.1		V	
Output Logic 1, V <sub>OH</sub>		1.43	1.6	V	
Output Load	100Ω connected between both outputs				output requires termination
Duty Cycle	45		55	%	measured 50% of waveform
Rise and Fall Time		500	850	ps	measured 20/80% of waveform
Jitter, Phase		0.5	1	ps RMS (1-σ)	12kHz to 20MHz frequency band
Jitter, Total			25	ps pk-pk	100,000 random periods

#### Notes:

- Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (5 year at 40°C average effective ambient temperature), shock and vibration.
- For specifications other than those listed, please contact sales.

### Output Enable / Disable Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin OE), Output Enable	0.7			V	or open
Input Voltage (pin OE), Output Disable (low power standby)			0.3	V	Output disabled to Hi-Z
Internal Pullup Resistance	50			kΩ	
Output Disable Delay			200	ns	
Output Enable Delay			10	ms	

### Absolute Maximum Ratings

Parameter	Min.	Typ.	Max.	Units	Notes
Storage Temperature	-55		+125	°C	

For the latest product information visit: <http://www.pericom.com/products/crystals-and-crystal-oscillators/standard-xo/?part=LD+3.3V>

For test circuit go to: [http://www.pericom.com/assets/sre/tc\\_lvds.pdf](http://www.pericom.com/assets/sre/tc_lvds.pdf)

For soldering reflow profile and reliability test ratings go to: <http://www.pericom.com/assets/sre/reflow2.pdf>

For tape and reel information go to: [http://www.pericom.com/assets/sre/tr\\_5032\\_xo.pdf](http://www.pericom.com/assets/sre/tr_5032_xo.pdf)