SaRonix-eCera

LR Series Voltage Controlled Crystal Oscillator (VCXO)

7.0 x 5.0mm

3.3V LVDS High Frequency VCXO





7.0 x 5.0mm Ceramic SMD

Product Features

- Frequencies available up to 800 MHz
- <3ps RMS jitter
- Designed for standard reflow and washing techniques
- Pb-free & RoHS/Green compliant

Product Description

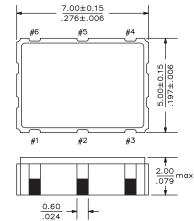
The LR Series 3.3V voltage controlled crystal oscillator achieves superb temperature stability over a broad range of operating conditions and frequencies. The device is constructed with a hermetically sealed quartz crystal resonator exhibiting a high-Q for exceptional performance. The device, available on tape and reel, is contained in a 7.0 x 5.0mm surface mount ceramic package.

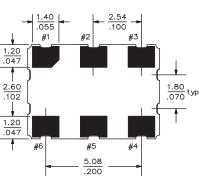
Applications

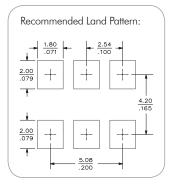
The LR Series VCXO is an ideal component in phase locked loop circuits that perform clock smoothing, clock/data recovery, or frequency translation and card synchronization functions, such as:

- •SONET/SDH/DWDM/E4 timing control & line cards
- •1 & 10 Gigabit Ethernet and FibreChannel
- Satellite, microwave and cellular base stations
- •Server & Storage platforms

Package:



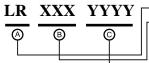




Pin Functions:

Pin	Function
1	Voltage Control
2	OE or NC
3	Ground
4	Q Output
5	Q Output
6	V _{CC}

Part Ordering Information:



– A: Product Family – B: XXX = Frequency Code C: YYYY = Specification Code

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

SaRonix-eCera [™] is a Pericom® Semiconductor company • US: +1-408-435-0800 TW: +886-3-4518888

8 • www.saronix-ecera.com



LR Series Voltage Controlled Crystal Oscillator (VCXO) 7.0 x 5.0mm

Electrical Performance

Parameter	Min.	Тур.	Max.	Units	Notes
Output Frequency (F _N)	19.44		800	MHz	As specified
Supply Voltage	3.14	3.3	3.46	V	
Supply Current			80	mA	
Frequency Stability			±20 to ±50	ppm	See Note 1 below
Operating Temperature Range	-40		+85	°C	As specified
Output Logic 0, V _{OL}	0.9	1.1		V	
Output Logic 1, V _{OH}		1.4	1.6	V	
Output Amplitude Differential	500		900	mV	
Output Load	100Ω +5pF across both outputs				output requires termination
Duty Cycle	45		55	%	measured +1.25 VDC
Rise and Fall Time		0.7	1.0	ns	measured 20/80% of waveform
Jitter, Phase		2.5	4	ps RMS (1-o)	12kHz to 20MHz frequency band
Jitter, Accumulated		5	10	ps RMS (1-o)	10,000 adjacent periods

Notes:

1. As specified. Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, shock and vibration. Stability is inclusive of 5 years aging at 40°C average effective ambient temperature for ordering options A, B, D, E.

2. For specifications other than those listed, please contact sales.

Frequency Modulation Function

Parameter	Min.	Тур.	Max.	Units	Notes
Absolute Pull Range (APR)	±50			ppm	See #1 below
Control Voltage Range	0.3		3.0	V _{DC}	As rated
Center Control Voltage	1.32	1.65	1.98	V	For RMT center frequency
Monotonic Linearity			10	%	Positive transfer slope
Input Impedance	50			kΩ	Control voltage pin
Modulation Bandwidth	10			kHz	-3dB

Notes:

1. APR is relative to the nominal output frequency FN; APR is inclusive (net) of frequency deviation due to stability.

Output Enable / Disable Function

Parameter	Min.	Тур.	Max.	Units	Notes
Input Voltage, Output Enable (pin 2)			VOL	V	or Open
Input Voltage, Output Disable (pin2)	V _{OH}			V	Q and Q outputs disable to High Impedance

Absolute Maximum Ratings

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

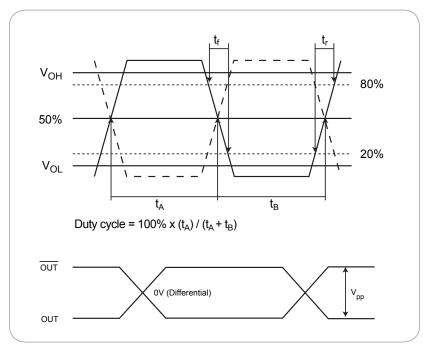
SaRonix-eCera™ is a Pericom® Semiconductor company • US: +1-408-435-0800 TW: +886-3-4518888 • www.saronix-ecera.com



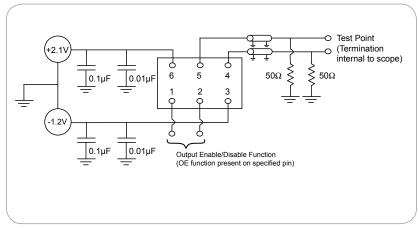
3.3V LVDS High Frequency VCXO LR

LR Series Voltage Controlled Crystal Oscillator (VCXO) 7.0 x 5.0mm

Output Waveform



Test Circuit



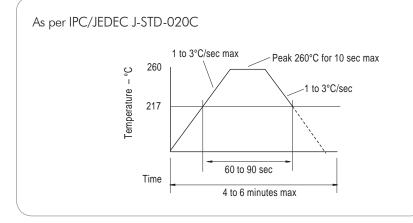
SaRonix-eCera™ is a Pericom® Semiconductor company • US: +1-408-435-0800 TW: +886-3-4518888 • www.saronix-ecera

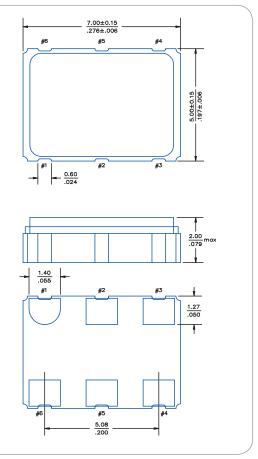


3.3V LVDS High Frequency VCXO LR

LR Series Voltage Controlled Crystal Oscillator (VCXO) 7.0 x 5.0mm

Reflow Soldering Profile





Reliability Test Ratings

This product is rated to meet the following test conditions:

Туре	Parameter	Test Condition
Mechanical	Shock	MIL-STD-883, Method 2002, Condition B
Mechanical	Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Mechanical	Terminal strength	MIL-STD-883, Method 2004, Condition D
Mechanical	Gross leak	MIL-STD-883, Method 1014, Condition C
Mechanical	Fine leak	MIL-STD-883, Method 1014, Condition A2 ($R_1 = 2x10^{-8}$ atm cc/s)
Mechanical	Solvent resistance	MIL-STD-202, Method 215
Environmental	Thermal shock	MIL-STD-883, Method 1011, Condition A
Environmental	Moisture resistance	MIL-STD-883, Method 1004
Environmental	Vibration	MIL-STD-883, Method 2007, Condition A
Environmental	Resistance to soldering heat	J-STD-020C Table 5-2 Pb-free devices (2 cycles max)

