

#### Ultra Low Jitter PLL Crystal Oscillator 3.2 x 2.5mm

### 2.5V/3.3V LVDS FS XO

## NX33SB



#### **Product Features**

- 4 selectable output frequencies
- Very low phase jitter < 1.0ps RMS max.
- Wide frequency range  $5 \sim 1000 \text{MHz}$
- Thicker crystal for improved reliability
- Low supply current 70mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant
- Fast lead time

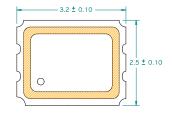
#### **Product Description**

The NX33SB XO series is a high performance LVDS crystal oscillator family with very low jitter performance. Depending on customers' needs, this family devices can support 4 different frequencies using the FS select pins. It supports various options including wider frequency range, 2.5V/3.3V voltage, and various stabilities. It is designed to meet the clock source specifications for communication systems, and other high performance equipment.

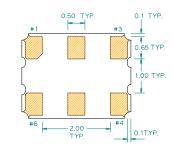
#### **Applications**

- Networking systems
- Servers and storage systems
- Profession video equipments
- Test and measurement
- FPGA/ASIC clock generation

#### Package: (Scale: none, Dimensions are in mm)



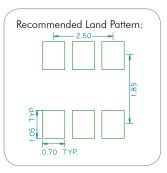




\*Extended high frequency power decoupling is recommended (see test circuit for minimum recommendation). To ensure optimal performance, do not route RF traces beneath the package.

#### **Part Ordering Information:**

Frequency Select family Specification Code



<b>Pin Functions:</b>						
Pin	Function					
1	FS1					
2	FS0					
3	Ground					
4	Q					
5	$\overline{Q}$					
6	V <sub>CC</sub>					

#### **Frequency Select Table:**

FS0	FS1	Output
0	0	Freq. 1*
0	1	Freq. 2*
1	0	Freq. 3*
1	1	Freq. 4*

\*Freq. 1, Freq. 2, Freq. 3, Freq. 4 can be any frequencies within the output frequency range.

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15-0058



# SaRonix-eCera

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#### **Electrical Performance**

Parameter		Min.	Тур.	Max.	Units	Notes
Output Frequency		5		1000	MHz	
C	3.135	3.3	3.465	¥.7		
Supply Voltage		2.375	2.5	2.625	V	
Supply Current				70	mA	
Frequency Stability		±20		±50	ppm	±20ppm is for -20°C to 70°C only
Operating Temperature Range		-40		+85	°C	
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		$100\Omega$ connected between outputs				Output requires termination
Differential Output Voltage. VOD		0.247		0.454	V	
Duty Cycle		45		55	%	Measured 50% V <sub>CC</sub>
Rise and Fall Time				400	ps	Measured 20/80% of waveform
Jitter, Accumulated , RMS (1-o)				6	ps	20.000 adjacent periods
	< 40MHz		0.4	1	ps	12kHz to 5 MHz frequency band
Jitter, Phase, RMS	40 to 1000MHz		0.4	1	ps	12kHz to 20 MHz frequency band
	125MHz, 156.25MHz		0.4	0.6	ps	12kHz to 20 MHz frequency band
Jitter, pk-pk			40	ps	100,000 random periods	

Notes:

1. Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (1 year at 25°C average effective ambient temperature), shock and vibration.

2. Phase jitter typical value is depending on output frequencies.

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

#### **Frequency Select Function**

Parameter	Min.	Тур.	Max.	Units	Notes
Input Voltage (pin 1 & pin 2), FS1 & FS0	0.7 V <sub>CC</sub>			V	
Input Voltage (pin 1 & pin 2), FS1 & FS0			0.3 V <sub>CC</sub>	V	
Settling Time after FS Change			10	ms	
Start up Time			10	ms	

#### **Absolute Maximum Ratings**

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

For the latest product information visit: http://www.pericom.com/products/crystals-and-crystal-oscillators/hiflex-xo/?part=NX33SB

For test circuit go to: http://www.pericom.com/pdf/sre/tc-lvds-sb.pdf

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

For tape and reel information go to: http://www.pericom.com/pdf/sre/tr\_3225\_xo.pdf

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All specifications are subject to change without notice. NX33SB