SaRonix-eCera™

Ultra Low Jitter PLL Crystal Oscillator 5.0 x 3.2mm

2.5V/3.3V LVDS FS XO

NX53SB

5.0 x 3.2mm Ceramic SMD

Product Features

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

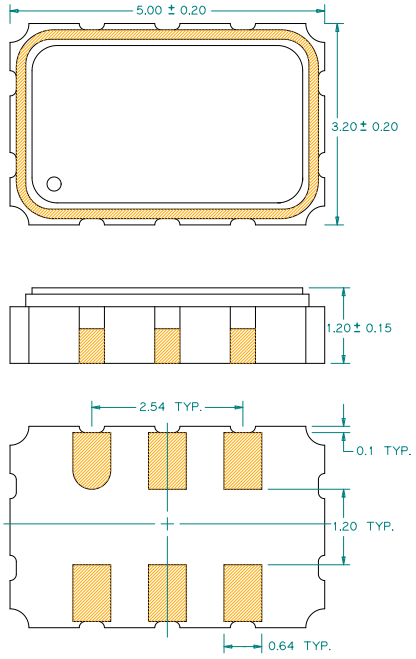
Product Description

The NX53SB 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

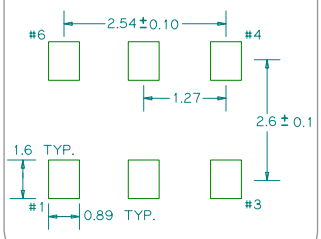
- Networking systems
- Servers and storage systems
- Profession video equipments
- Test and measurement
- FPGA/ASIC clock generation

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.

Recommended Land Pattern:



Pin Functions:

Pin	Function
1	FS1
2	FS0
3	Ground
4	Q
5	$\overline{Q}$
6	V_{CC}

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.

Part Ordering Information:

NX 53 SB XXXX

(A) Frequency Select family (B) Specification Code

Electrical Performance

Parameter		Min.	Typ.	Max.	Units	Notes
Output Frequency		5		1000	MHz	
Supply Voltage		3.135	3.3	3.465	V	
		2.375	2.5	2.625		
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_{OL}		0.9	1.1		V	
Output Logic 1, V_{OH}			1.43	1.6	V	
Output Load		100Ω connected between outputs				Output requires termination
Differential Output Voltage. V_{OD}		0.247		0.454	V	
Duty Cycle		45		55	%	Measured 50% V_{CC}
Rise and Fall Time				400	ps	Measured 20/80% of waveform
Jitter, Accumulated , RMS (1-σ)				6	ps	20.000 adjacent periods
Jitter, Phase, RMS	< 40MHz		0.4	1	ps	12kHz to 5 MHz frequency band
	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.	Typ.	Max.	Units	Notes
Input Voltage (pin 1 & pin 2), FS1 & FS0	0.7 V_{CC}			V	
Input Voltage (pin 1 & pin 2), FS1 & FS0			0.3 V_{CC}	V	
Settling Time after FS Change			10	ms	
Start up Time			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/hiflex-xo/?part=NX53SB

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: http://www.pericom.com/pdf/sre/reflow.pdf

For tape and reel information go to: http://www.pericom.com/pdf/sre/tr_5032_xo.pdf