2.5V/3.3V HCSL FS XO
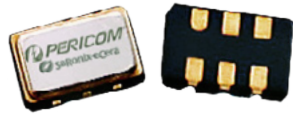
NX74SA

7.0 x 5.0mm Ceramic SMD

Product Features

- 2 selectable output frequencies
- Meet PCIe Gen2 and Gen3 clock requirements at 100MHz
- Very low phase jitter - < 1.0ps RMS max.
- Wide frequency range - 5 ~ 212.5MHz
- Thicker crystal for improved reliability
- Low supply current - 70mA max.
- Industrial Temperature Range
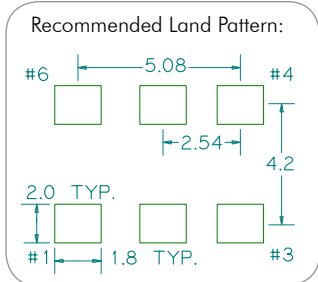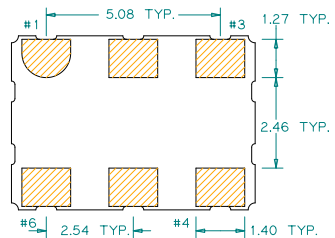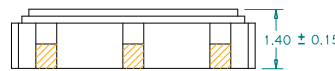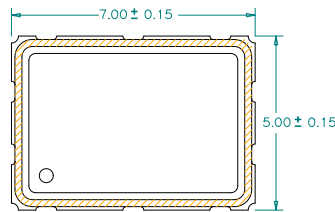- Pb-free & RoHS compliant
- Fast lead time

Product Description

The NX74SA XO series is a high performance HCSL crystal oscillator family with very low jitter performance. Depending on customers' needs, this family devices can support 2 different frequencies using the FS select pin. 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
- FPGA/ASIC clock generation

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

7.00 ± 0.15
5.00 ± 0.15
1.40 ± 0.15

#1   5.08 TYP.   #3   1.27 TYP.
2.46 TYP.
#6   2.54 TYP.   #4   1.40 TYP.

*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.
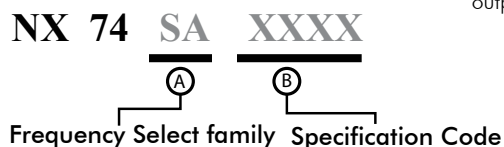
Recommended Land Pattern:

#6   5.08   #4
2.54
4.2
2.0 TYP.
#1   1.8 TYP.   #3

Pin Functions:

Pin	Function
1	OE Function
2	FS
3	Ground
4	Q
5	$\overline{Q}$
6	V$_{CC}$

Frequency Select Table:

FS	Output
0	Frequency 1*
1	Frequency 2*

*Frequency 1 and Frequency 2 can be any frequencies within the output frequency range.

Part Ordering Information:

NX 74 SA XXXX

Ⓐ   Ⓑ

Frequency Select family   Specification Code

SaRonix-eCera™ is a Pericom® Semiconductor company   •   US: +1-408-232-9100 TW: +886-3-4518888   •   www.pericom.com

PERICOM
Enabling Serial Connectivity   15-0044   All specifications are subject to change without notice.   NX74SA   Rev A   02/20/15   1

SaRonix-eCera™

Ultra Low Jitter PLL Crystal Oscillator 7.0 x 5.0mm

Electrical Performance

Parameter		Min.	Typ.	Max.	Units	Notes
Output Frequency		5		212.5	MHz	
Supply Voltage		3.135	3.3	3.465	V	
		2.375	2.5	2.625		
Supply Current, Output Enabled				70	mA	OE tied to "1" or open
Supply Current, Output Disabled only				40	mA	Output is Hi-Z
Frequency Stability				±50	ppm	±20ppm is for -20°C to 70°C only
Operating Temperature Range		-40		+85	°C	
Output Logic 0, V_{OL}		-0.15	0		V	
Output Logic 1, V_{OH}		0.66	0.7	0.9	V	
Output Load		$R_S = 33\Omega$, $R_P = 50\Omega$, $C_L = 2pF$				Output requires termination
Duty Cycle		45		55	%	Measured 50% V_{CC}
Rise and Fall Time				700	ps	Measured from $V_{OL} = 0.175V$ to $V_{OH} = 0.5252V$
Jitter, RMS	PCIe Gen2, 100 MHz		2.0	3.0	ps	As defined by PCI-SIG for PCIe Gen2
Jitter, RMS	PCIe Gen3, 100 MHz		0.43	1.0	ps	As defined by PCI-SIG for PCIe Gen3
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 212.5MHz		0.4	1	ps	12kHz to 20 MHz frequency band
	100MHz, 125MHz		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.

Output Enable / Disable & Frequency Select Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin 1 & pin 2), OE & FS	0.7 V_{CC}			V	
Input Voltage (pin 1 & pin 2), OE & FS			0.3 V_{CC}	V	
Output Disable Delay			100	ns	
Output Enable Delay			100	ns	
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=NX74SA

For test circuit go to: http://www.pericom.com/pdf/sre/tc-hcsl-sa.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_7050_xo.pdf

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