

## 2.5V/3.3V CMOS FS XO

# NX71SA



7.0 x 5.0mm Ceramic SMD

### Product Features

- 2 selectable output frequencies
- Very low phase jitter - < 1ps RMS max.
- Wide frequency range - 5 ~ 250MHz
- Low supply current - 60mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant
- Fast lead time

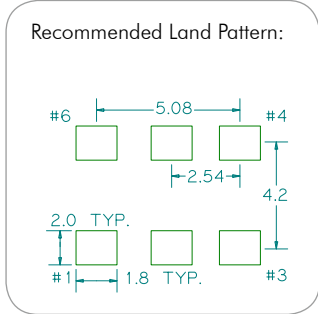
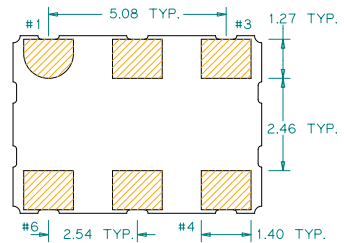
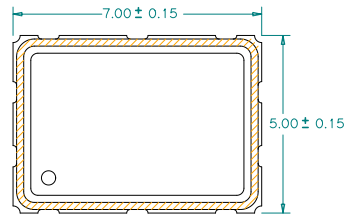
### Product Description

The NX71SA XO series is a high performance CMOS crystal oscillator family with very low jitter performance and selectable output frequencies. 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
- Profession video equipments
- Test and measurement
- FPGA/ASIC clock generation

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



### Pin Functions:

Pin	Function
1	OE Function
2	FS
3	Ground
4	Output
5	N/C
6	V <sub>DD</sub>

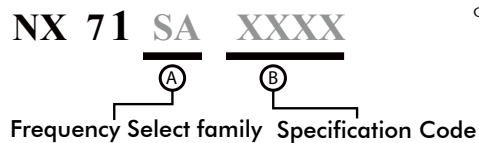
### Frequency Select Table:

FS	Output
0	Frequency 1*
1	Frequency 2*

\*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.

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

### Part Ordering Information:





## Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency	5		250	MHz	
Supply Voltage	3.135	3.3	3.465	V	
	2.375	2.5	2.625		
Supply Current, Output Enabled			60	mA	OE tied to "1" or open
Supply Current, Output Disabled only			40	mA	Output is Hi-Z
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>			0.4	V	
Output Logic 1, V <sub>OH</sub>	V <sub>DD</sub> -0.4			V	
Output Load			15	pF	
Duty Cycle	45		55	%	Measured 50% V <sub>DD</sub>
Rise and Fall Time			3	ns	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 250MHz	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:

- 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.
- Phase jitter typical value is depending on output frequencies.
- 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 <sub>DD</sub>			V	
Input Voltage (pin 1 & pin 2), OE & FS			0.3 V <sub>DD</sub>	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=NX71SA>

For test circuit go to: <http://www.pericom.com/pdf/sre/tc-6pcmos-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](http://www.pericom.com/pdf/sre/tr_7050_xo.pdf)