

2.5V/3.3V Frequency & Logic Selection XO

NX70SA



7.0 x 5.0mm Ceramic SMD

Product Features

- Programming capability & short lead time
- Available CML, LVPECL, LVDS, HCSL and CMOS output
- Very low phase jitter - < 1.0ps RMS max.
- Wide frequency range - 5 ~ 1000MHz
- Thicker crystal for improved reliability
- Low supply current - 80mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant

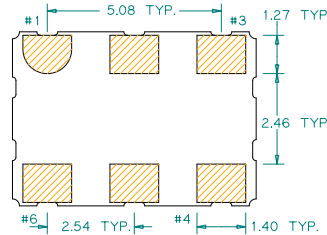
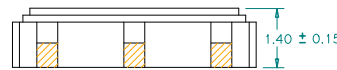
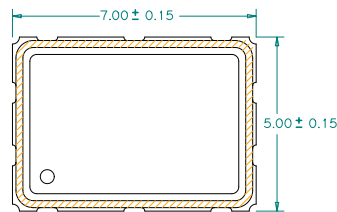
Product Description

The NX70SA XO series is a high performance & programmable crystal oscillator family with very low jitter capability. Depending on customers' needs, this family devices can support different Logical types between CML, LVPECL, LVDS, HCSL and CMOS. 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.

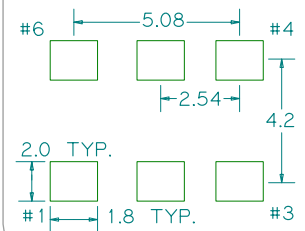
Applications

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

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



Recommended Land Pattern:



Pin Functions:

Pin	Function
1	FS/OE
2	FS/OE/NC
3	Ground
4	Q
5	\bar{Q}
6	V _{CC}

Frequency Select Table:

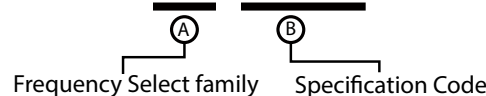
FS	Output
0	Frequency 1*
1	Frequency 2*

*The output 1 to 2 are flexible can be any frequencies within the range, it could be the different clock type by customer request.

*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:

NX 70 SA XXXX




Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency	5		1000	MHz	CMOS: 5-250 MHz
Supply Voltage	3.135	3.3	3.465	V	
	2.375	2.5	2.625		
CML/HCSL/LVDS Supply Current			70	mA	
LVPECL Supply Current			80	mA	
CMOS Supply Current			60	mA	
Frequency Stability	±20		±50	ppm	±20ppm is for -20°C to 70°C only
Operating Temperature Range	-40		+85	°C	
LVPECL Output Logic 0, V _{OL}			V _{CC} -1.55	V	
LVPECL Output Logic 1, V _{OH}	V _{CC} -1.2			V	
LVPECL Output Load	50Ω to V _{CC} -2V				
LVDS Output Logic 0, V _{OL}	0.9			V	
LVDS Output Logic 1, V _{OH}			1.6	V	
LVDS Output Load	100Ω & 5pF				
HCSL Output Logic 0, V _{OL}	-0.15			V	
HCSL Output Logic 1, V _{OH}			0.9	V	
HCSL Output Load	R _s = 33Ω, R _p = 50Ω, C _L = 2pF (Output requires termination)				
CMOS Output Logic 0, V _{OL}			0.4	V	
CMOS Output Logic 1, V _{OH}	V _{CC} -0.4			V	
CMOS Output Load	At 15pF				
CML Output (VOD)	350m		650m	V	
CML Output Load	100Ω & 5pF (Differential)				
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:

- 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.

Frequency Select Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage, FS & OE (High)	0.7 V _{CC}			V	
Input Voltage, FS & OE (Low)			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=NX70SA>

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