

### 2.5V/3.3V LVPECL FS XO

## NX22SA



2.5 x 2.0mm Ceramic SMD

#### **Product Features**

- 2 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 80mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant
- Fast lead time

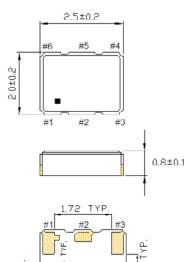
# **Product Description**

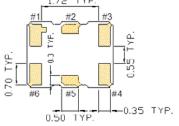
The NX22SA XO series is a high performance LVPECL crystal oscillator family with very low jitter performance. Depending on customers' needs, this family devices can support 2 different frequencies using the FS select pin. It supports various options including wider frequency range, 2.5V/3.3V voltage, 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
- Profession video equipments
- Test and measurement
- FPGA/ASIC clock generation

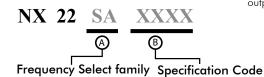
#### Package: (Scale: none, Dimensions are in mm)





\*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:**



Recommended Land Pattern:

#### **Pin Functions:**

Pin	Function					
1	OE Function					
2	FS					
3	Ground					
4	Q					
5	$\overline{Q}$					
6	V <sub>CC</sub>					

#### **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.

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RevB



#### Ultra Low Jitter PLL Crystal Oscillator 2.5 x 2.0mm

#### **Electrical Performance**

Parameter		Min.	Тур.	Max.	Units	Notes
Output Frequency		5		1000	MHz	
Supply Voltage		3.135	3.3	3.465	V	
		2.375	2.5	2.625	V	
Supply Current, Out	put Enabled			80	mA	OE tied to "1" or open
Supply Current, Out	put Disabled only			40	mA	Output is Hi-Z
Frequency Stability		±20		±50	ppm	±20ppm is for -20°C to 70°C only
Operating Temperat	ure Range	-40		+85	°C	
Output Logic 0, VOL		V <sub>CC</sub> -1.55 V				
Output Logic 1, VOI	I	V <sub>CC</sub> -1.2 V				
Output Load		$50\Omega$ to V <sub>CC</sub> -2V output termination			termination	
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-σ)	6 ps 20.000 ac		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			100,000 random periods	

- 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.	Тур.	Max.	Units	Notes
Input Voltage (pin 1 & pin 2), OE & FS	0.7 V <sub>CC</sub>			V	
Input Voltage (pin 1 & pin 2), OE & FS			0.3 V <sub>CC</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.	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=NX22SA

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

 $\textbf{For soldering reflow profile and reliability test ratings go to:} \ \underline{\text{http://www.pericom.com/pdf/sre/reflow.pdf}}$ 

For tape and reel information go to: http://www.pericom.com/pdf/sre/tr 2520 xo.pdf

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