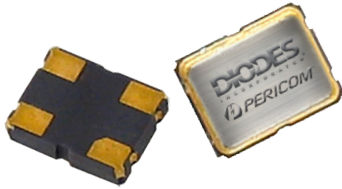


**2.5V/3.3V CMOS XO**

**NX251**



2.5 x 2.0mm Ceramic SMD

**Product Features**

- Very low phase jitter - < 1ps RMS max.
- Wide frequency range - 5 ~ 250MHz
- Thicker crystal for improved reliability
- Low supply current - 50mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant
- Fast lead time

**Product Description**

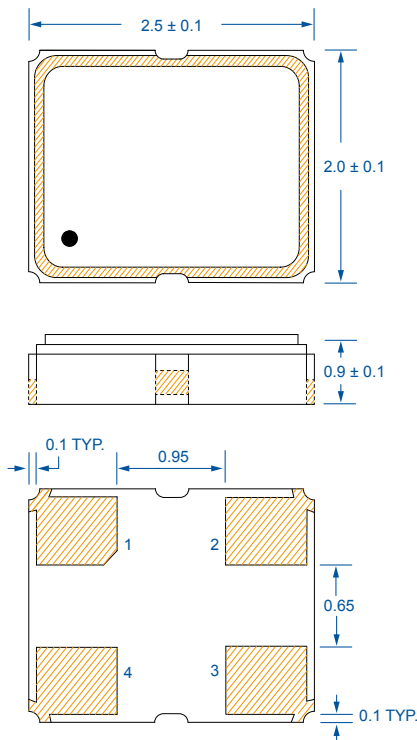
The NX251 XO series is a high performance CMOS crystal oscillator family with very low jitter performance. It supports various options including wider frequency range, 2.5V/3.3V voltage, and various stabilities.

It is designed to meet the clock source specifications for communication systems, and other high performance equipment.

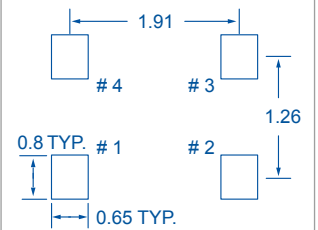
**Applications**

- Networking systems
- Servers and storage systems
- Consumer applications
- Portable Multimedia Devices
- Bluetooth

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



Recommended Land Pattern:



**Pin Functions:**

Pin	Function
1	OE Function
2	Ground
3	Output
4	V <sub>DD</sub>

\*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 251** **V** **I** **FFFF.FFFFFFFF**

Voltage:  
1 = +3.3V  
2 = +2.5V

Stability and Temp Range:

Stability	Temp Range
A = +/-20 ppm	-20/+70°C
B = +/-25 ppm	-20/+70°C
C = +/-50 ppm	-20/+70°C
D = +/-25 ppm	-40/+85°C
E = +/-50 ppm	-40/+85°C

Frequency:  
FFFFFFFFFFFF  
MHz, "4 digits/decimal/6 digits" format

## Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output Frequency	5		250	MHz	
Supply Voltage	3.135	3.3	3.465	V	See ordering options
	2.375	2.5	2.625		
Supply Current, Output Enabled			60	mA	
Supply Current, Output Disabled only			40	mA	
Frequency Stability			±50	ppm	See ordering options
Operating Temperature Range	-40		+85	°C	See ordering options
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 Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input Voltage (pin 1), Output Enable	0.7 V <sub>DD</sub>			V	or open
Input Voltage (pin 1), Output Disable (low power standby)			0.3 V <sub>DD</sub>	V	Output is Hi-Z
Output Disable Delay			100	ns	
Output Enable Delay			100	ns	
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: <https://www.diodes.com/part/NX251>

For test circuit go to: [https://www.diodes.com/assets/sre/tc\\_hcmos2.pdf](https://www.diodes.com/assets/sre/tc_hcmos2.pdf)

For soldering reflow profile and reliability test ratings go to: <https://www.diodes.com/assets/sre/reflow.pdf>

For tape and reel information go to: <https://www.diodes.com/assets/sre/tr-2520-xo.pdf>



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