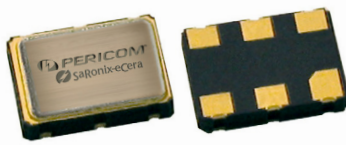


## 2.5V/3.3V CMOS XO

# NX701



7.0 x 5.0mm Ceramic SMD

### Product Features

- Very low phase jitter - < 1ps RMS max.
- Wide frequency range - 5 ~ 250MHz
- Thicker crystal for improved reliability
- Low supply current - 60mA max.
- Industrial Temperature Range
- Pb-free & RoHS compliant
- Fast lead time

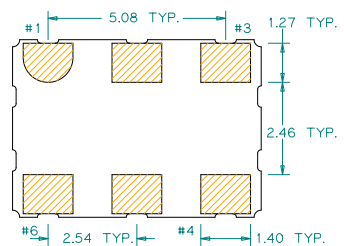
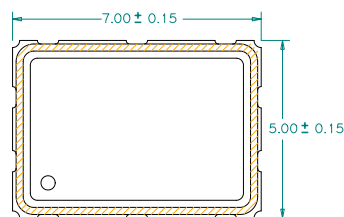
### Product Description

The NX701 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.

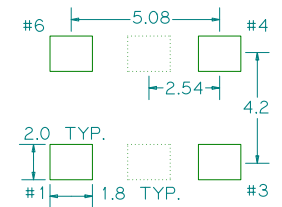
### Applications

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

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



Recommended Land Pattern:



\*Note: pads 2 and 5 are optional (shown as dotted lines). XO's are designed to fit on industry standard, 4 pad layouts.

### Pin Functions:

| Pin | Function        |
|-----|-----------------|
| 1   | OE Function     |
| 2   | N/C             |
| 3   | Ground          |
| 4   | Output          |
| 5   | N/C             |
| 6   | 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 701 V 1 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:  
FFFF.FFFFFFFF  
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:

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 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: <http://www.pericom.com/products/crystals-and-crystal-oscillators/hiflex-xo/?part=NX701>

For test circuit go to: [http://www.pericom.com/pdf/sre/tc\\_6pcmos.pdf](http://www.pericom.com/pdf/sre/tc_6pcmos.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)