

# Crystal oscillator for 5G

## NP2520SBB Simple Packaged Crystal Oscillator (SPXO)

### Main Application

For 5G compatible device, Optical Communication, Optical Transceiver, WDM equipment

### Features

- Differential Output SPXO
- Compact dimension 2.5 × 2.0 × 0.8 mm
- Supply Voltage : +2.5V or +3.3V
- Output Specification : LVDS
- Excellent low phase jitter  
(Max. 60fs @156.25MHz)

**Pb Free** **RoHS Compliant**  
Directive 2011/65/EU  
Directive (EU) 2015/863

Absolute maximum rating  
Supply Voltage (V<sub>CC</sub>) -0.3 to +4.0 V  
Storage Temperature Range -55 to +125 °C

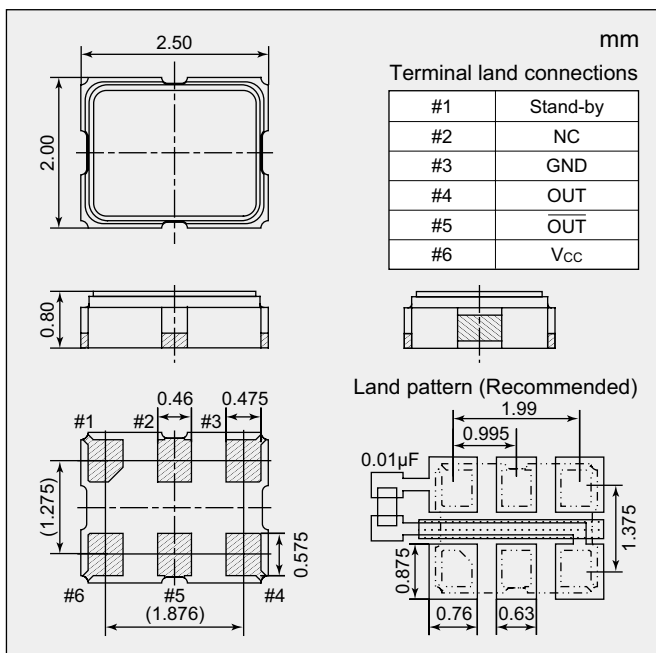


### Specifications

Item	Model	NP2520SBB
Output Specification		LVDS
Nominal Frequency Range (MHz)		100 to 170
Standard Frequency(MHz)		156.25
Overall Frequency Tolerance *1		Max. ±50 ×10 <sup>-6</sup>
Operating Temperature Range (°C)		-40 to +85
Supply Voltage [V <sub>CC</sub> ] (V)		+2.5 ± 5 %      +3.3 ± 10 %
Current Consumption	Enable (mA) +25°C	Max. 40 (STAND-BY=V <sub>CC</sub> or OPEN, R <sub>L</sub> =100Ω)
	Stand-by (µA) +25°C	Max. 30 (STAND-BY=GND)
Output Voltage		V <sub>OD1</sub> : V <sub>OD2</sub> : +0.247 to +0.454V (Differential output voltage) ΔV <sub>OD</sub> : Max. 50mV (Differential output voltage) V <sub>OS1</sub> , V <sub>OS2</sub> : +1.125 to +1.375V (Differential output voltage) ΔV <sub>OS</sub> : Max. 50mV (Differential output voltage)
Rise Time / Fall Time (ns)		Max. 0.4 (20 to 80% Waveform)
Symmetry (%)		45 to 55 (at 50% Waveform)
Output Load [R <sub>L</sub> ] (Ω)		100 (Differential output voltage)
Start-up Time (ms)		Max. 10
Phase Jitter (fs)	+3.3V, +25°C	Max. 60 (156.25MHz) (Offset Frequency : 12kHz to 20MHz)
Specification Number		NSC5327A      NSC5327B

\*1 : The frequency stability includes initial frequency tolerance, temperature variation, and supply variation.

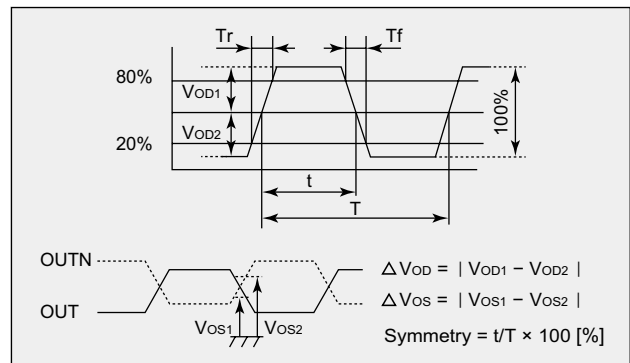
### Dimensions



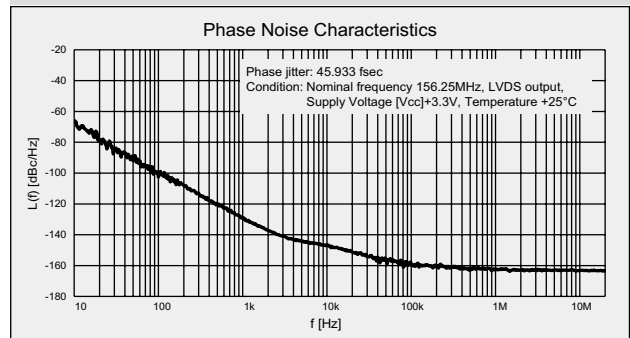
### Standby Function Table (Three-state)

#1 Input	#4 and #5 output
Level H (V <sub>IH</sub> ≥ 0.7 V <sub>CC</sub> ) or OPEN	Oscillation output ON
Level L (V <sub>IL</sub> ≤ 0.3 V <sub>CC</sub> )	High impedance

### Output waveform



### Phase Noise Characteristics



Please specify the model name, frequency, and specification number when you order products.  
For further questions regarding specifications, please feel free to contact us.