

Model Name NP5032SA / NP5032SB

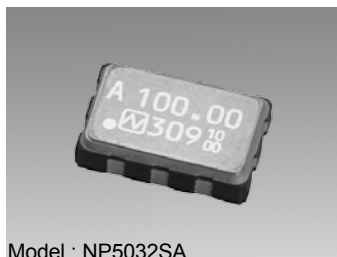
Simple Packaged Crystal Oscillator (SPXO)

■ Main Application

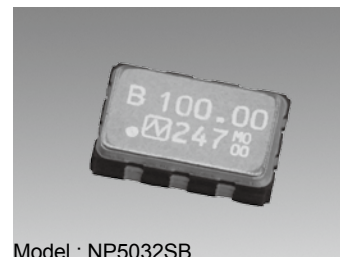
For SONET-, SDH-, and GbEthernet-related equipment

■ Features

- Ultra-compact with dimensions of 5.0 × 3.2 × 1.2 mm.
- Supply voltage: +2.5V or +3.3V
- LVPECL output level (Model : NP5032SA)
- LVDS output level (Model : NP5032SB)
- Low current consumption(36mA Typ.)
- Excellent low phase jitter.(0.15ps Typ. @156.25MHz)



Model : NP5032SA



Model : NP5032SB

■ Specifications

Item		Model			NP5032SA
Output type					LVPECL
Nominal frequency range (MHz)					100 to 161
Overall frequency tolerance					Max. $\pm 25 \times 10^{-6}$ Max. $\pm 50 \times 10^{-6}$ Max. $\pm 100 \times 10^{-6}$
Operating temperature range (°C)					0 to +70 0 to +85 0 to +85
Storage Temperature Range (°C)					-55 to +125
Supply voltage [V _{CC}] (V)					+2.5 $\pm$ 5 %, +3.3 $\pm$ 10 %
Current consumption	Enable (mA)				Max. 60 (Typ. 36) (STAND-BY=V _{CC} or OPEN, R _L =50Ω)
	Stand-by (μA)				Max. 30 (STAND-BY=GND)
Output voltage (V)					V _{OL} : V _{CC} -1.81 to V _{CC} -1.62 (DC characteristics)
					V _{OH} : V _{CC} -1.025 to V _{CC} -0.88 (DC characteristics)
Rise time / Fall time (ns)					Max. 1 (20 to 80% Waveform)
Symmetry (%)					45 to 55 (at 50% Waveform)
Output load (Ω)					50 (Terminated to V _{CC} -2.0V)
Phase jitter					Max. 1 (Offset frequency : 12kHz to 20MHz)

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

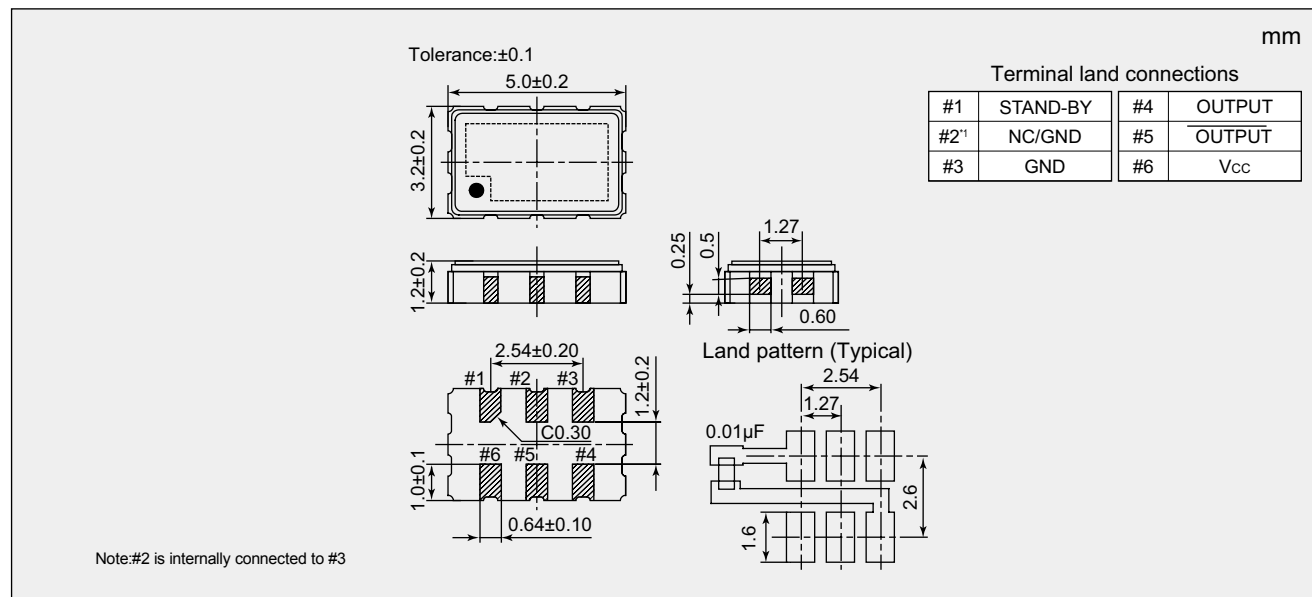
Item		Model			NP5032SB
Output type					LVDS
Nominal frequency range (MHz)					100 to 161
Overall frequency tolerance					Max. $\pm 25 \times 10^{-6}$ Max. $\pm 50 \times 10^{-6}$ Max. $\pm 100 \times 10^{-6}$
Operating temperature range (°C)					0 to +70 0 to +85 0 to +85
Storage Temperature Range (°C)					-55 to +125
Supply voltage [V _{CC}] (V)					+2.5 $\pm$ 5 %, +3.3 $\pm$ 10 %
Current consumption	Enable (mA)				Max. 40 (Typ. 10) (STAND-BY=V _{CC} or OPEN, R _L =100 Ω)
	Stand-by (μA)				Max. 30 (STAND-BY=GND)
Output voltage					V _{OD1} , V _{OD2} : 0.247 to 0.454V (Diffencial output voltage)
					ΔV _{OD} : Max. 50mV (Output change)
					V _{OS1} , V _{OS2} : 1.125 to 1.375V (Offset voltage, DC characteristics)
					ΔV _{OS} : Max. 50mV (Offset voltage, DC characteristics)
Rise time / Fall time (ns)					Max. 1 (20 to 80% Waveform)
Symmetry (%)					45 to 55 (at 50% Waveform)
Output load (Ω)					100 (Connected between out and complementary out)
Phase jitter (ps)					Max. 1 (Typ. 0.15) (Offset frequency : 12kHz to 20MHz)

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

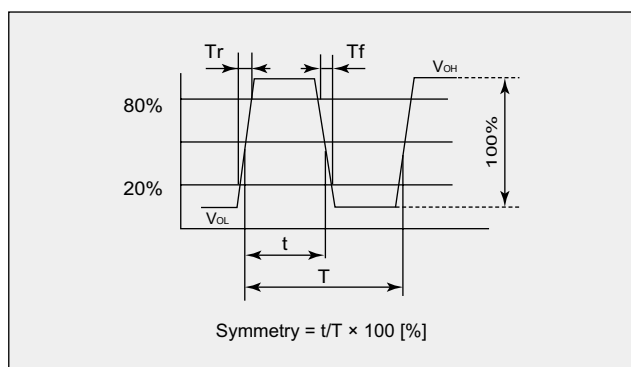
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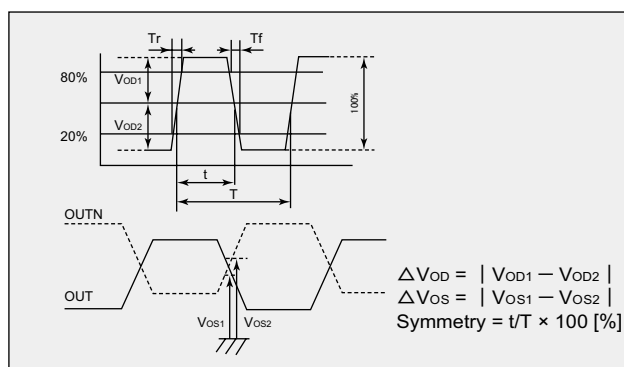
■ Dimensions (NP5032SA / NP5032SB)



■ Output waveform (NP5032SA)



■ Output waveform (NP5032SB)



■ Stand-by Function (NP5032SA)

#1 Input	#4 and #5 output
Level H ($V_{IH} \geq 0.7 V_{CC}$) or OPEN	Oscillation output ON
Level L ($V_{IL} \leq 0.3 V_{CC}$)	High impedance

■ Stand-by Function (NP5032SB)

#1 Input	#4 and #5 output
Level H ($V_{IH} \geq 0.7 V_{CC}$) or OPEN	Oscillation output ON
Level L ($V_{IL} \leq 0.3 V_{CC}$)	High impedance

■ Number for specifying an order (NP5032SA)

Overall frequency tolerance : $\pm 25 \times 10^{-6} / 0$ to $+70^\circ\text{C}$

Supply voltage (V_{CC})	(V)	+2.5 $\pm$ 5%	+3.3 $\pm$ 10%
Number for specifying an order	NSA3509E	NSA3509F	

Overall frequency tolerance : $\pm 50 \times 10^{-6} / 0$ to $+85^\circ\text{C}$

Supply voltage (V_{CC})	(V)	+2.5 $\pm$ 5%	+3.3 $\pm$ 10%
Number for specifying an order	NSA3509C	NSA3509D	

Overall frequency tolerance : $\pm 100 \times 10^{-6} / 0$ to $+85^\circ\text{C}$

Supply voltage (V_{CC})	(V)	+2.5 $\pm$ 5%	+3.3 $\pm$ 10%
Number for specifying an order	NSA3509A	NSA3509B	

■ Number for specifying an order (NP5032SB)

Overall frequency tolerance : $\pm 25 \times 10^{-6} / 0$ to $+70^\circ\text{C}$

Supply voltage (V_{CC})	(V)	+2.5 $\pm$ 5%	+3.3 $\pm$ 10%
Number for specifying an order	NSA3510E	NSA3510F	

Overall frequency tolerance : $\pm 50 \times 10^{-6} / 0$ to $+85^\circ\text{C}$

Supply voltage (V_{CC})	(V)	+2.5 $\pm$ 5%	+3.3 $\pm$ 10%
Number for specifying an order	NSA3510C	NSA3510D	

Overall frequency tolerance : $\pm 100 \times 10^{-6} / 0$ to $+85^\circ\text{C}$

Supply voltage (V_{CC})	(V)	+2.5 $\pm$ 5%	+3.3 $\pm$ 10%
Number for specifying an order	NSA3510A	NSA3510B	

■ How to Specify an Order

When ordering our products, specify them with an "Ordering Code" that consists of the following: Example : When ordering a product with model name: NP5032SA, 100 MHz, $\pm 25 \times 10^{-6} / 0$ to 70°C , +2.5V

Model name - [Frequency (up to 8 digits)] M - [Number for specifying an order]

Ordering Code: NP5032SA - 100M - NSA3509E

If you have any queries concerning our standard frequencies and numbers for specifying orders, please contact our sales representatives or visit our homepage (<http://www.ndk.com/>).