

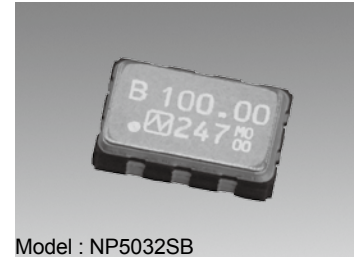
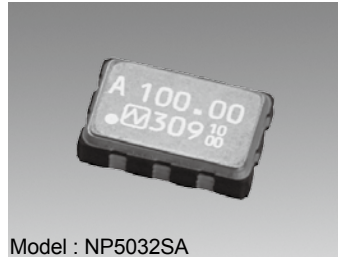
Model Name NP5032SA / NP5032SB Simple Packaged Crystal Oscillator (SPXO)

■ 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)



■ 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.

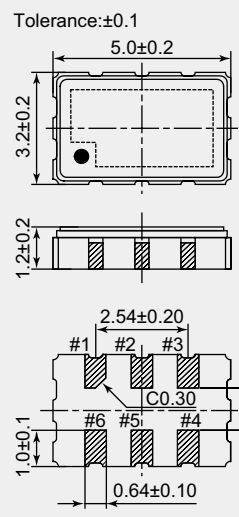
Item	Model	NP5032SB		
Output type		LVDS		
Nominal frequency range (MHz)		100 to 161		
Overall frequency tolerance		Max. $\pm 25 \times 10^{-6}$	Max. $\pm 50 \times 10^{-6}$	Max. $\pm 100 \times 10^{-6}$
Operating temperature range (°C)		0 to +70	0 to +85	0 to +85
Storage Temperature Range (°C)		-55 to +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 (Differential output voltage)		
		Δ V _{OD} : Max. 50mV (Output change)		
		V _{OS1} , V _{OS2} : 1.125 to 1.375V (Offset voltage, DC characteristics)		
		Δ V _{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.

Model Name NP5032SA / NP5032SB Simple Packaged Crystal Oscillator (SPXO)

■ Dimensions (NP5032SA / NP5032SB)

Tolerance: ±0.1



5.0±0.2
3.2±0.2
1.2±0.2
2.54±0.20
1.2±0.2
1.0±0.1
0.64±0.10

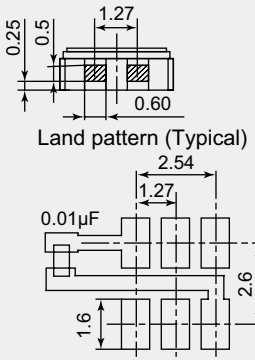
Note: #2 is internally connected to #3

mm

Terminal land connections

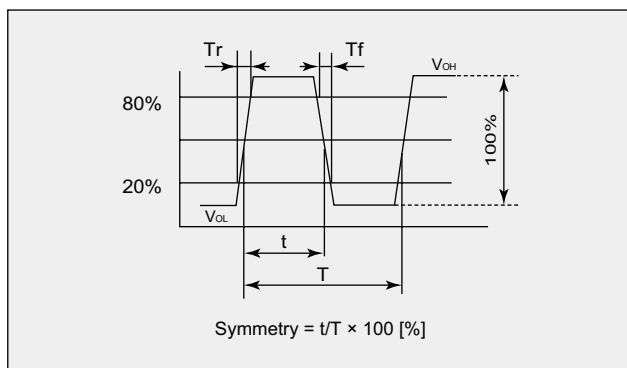
#1	STAND-BY	#4	OUTPUT
#2 ¹	NC/GND	#5	OUTPUT
#3	GND	#6	V _{CC}

Land pattern (Typical)

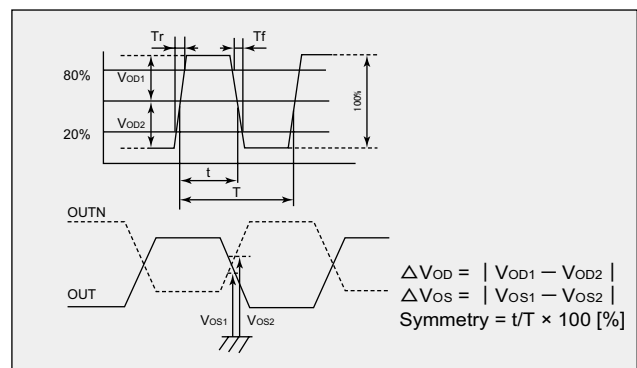


0.25, 0.5, 1.27, 0.60, 2.54, 1.27, 0.01μF, 1.6, 2.6

■ 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 : ±25×10⁻⁶ / 0 to +70°C

Supply voltage (V _{CC})	(V)	+2.5±5%	+3.3±10%
Number for specifying an order		NSA3509E	NSA3509F

Overall frequency tolerance : ±50×10⁻⁶ / 0 to +85°C

Supply voltage (V _{CC})	(V)	+2.5±5%	+3.3±10%
Number for specifying an order		NSA3509C	NSA3509D

Overall frequency tolerance : ±100×10⁻⁶ / 0 to +85°C

Supply voltage (V _{CC})	(V)	+2.5±5%	+3.3±10%
Number for specifying an order		NSA3509A	NSA3509B

■ Number for specifying an order (NP5032SB)

Overall frequency tolerance : ±25×10⁻⁶ / 0 to +70°C

Supply voltage (V _{CC})	(V)	+2.5±5%	+3.3±10%
Number for specifying an order		NSA3510E	NSA3510F

Overall frequency tolerance : ±50×10⁻⁶ / 0 to +85°C

Supply voltage (V _{CC})	(V)	+2.5±5%	+3.3±10%
Number for specifying an order		NSA3510C	NSA3510D

Overall frequency tolerance : ±100×10⁻⁶ / 0 to +85°C

Supply voltage (V _{CC})	(V)	+2.5±5%	+3.3±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, ±25 × 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/>).