

# Crystal Clock Oscillator **NEW**

## NZ2520S Series

### Model name

NZ2520SB Frequency stability of  $\pm 20 \times 10^{-6}$ .

### Application

- For wireless LAN, UWB, and WIMAX
- For compact mobile information equipment, such as DVC, DSC, notebook PC, and PDA

### Features

- Size: A minimum-size crystal clock oscillator with dimensions of 2.5 x 2.0 mm.
- Thickness: Ultra-thin with a thickness of 0.9 mm.
- Weight: Weighs only 0.02 g, giving unparalleled light-weight.
- This crystal clock oscillator can support low frequencies (from 1.5 MHz); an achievement not easy for other crystal oscillators of the same size to equal.
- Automatic mounting by taping and IR reflow (lead-free) are possible.
- Lead-free.

**Pb Free**

**RoHS Compliant**  
Directive 2002/95/EC

Absolute maximum rating  
Power supply voltage ( $V_{DD}$ )-0.5 to +4.0V DC  
Storage temperature range -55 to +125°C

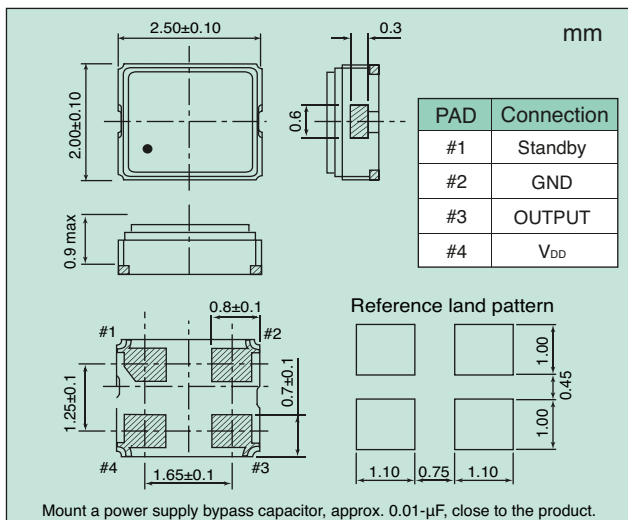


### Specifications

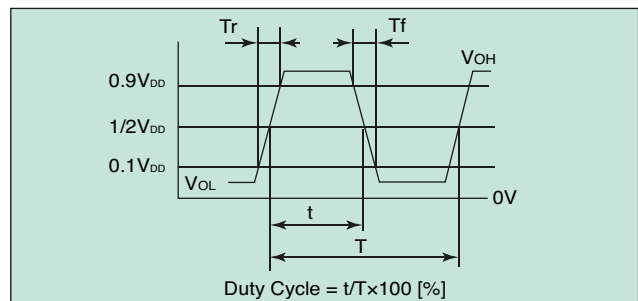
Item	Model	NZ2520SB						
Output level		C-MOS						
Frequency range <sup>1</sup>	(MHz)	1.5 ≤ F < 10	10 ≤ F < 20	20 ≤ F < 30	30 ≤ F < 40	40 ≤ F < 50	50 ≤ F ≤ 60	
Operating temperature range <sup>2</sup>	(°C)	-10 to +60						
Frequency Stability	( $\times 10^{-6}$ )	±20						
Power supply voltage	(V)	+1.8±0.1	+2.5±0.1	+3.0±0.1	+3.3±0.1			
Consumption current	During operation	+1.8V, 25°C	2.5	3.5	4.0	4.5	5.0	5.5
		+2.5V, 25°C	3.0	4.0	4.5	5.0	5.5	6.0
		+3.0V, 25°C	3.5	4.5	5.0	5.5	6.0	6.5
		+3.3V, 25°C	3.5	4.5	5.0	5.5	6.0	7.0
	During standby	+1.8V, 25°C	10					
		+2.5V, 25°C	10					
		+3.0V, 25°C	10					
		+3.3V, 25°C	10					
$V_{OL} \text{ max}/V_{OH} \text{ min}$	(V)	0.1 $V_{DD}$ /0.9 $V_{DD}$						
$T_r \text{ max}/T_f \text{ max}$	(ns)	5/5						
Duty Cycle min. to max.	(%)	45 to 55						
Load ( $C_L$ ) max	(pF)	15						
Oscillation start time max	(ms)	10						
Standby function		Available (tristate)						
Number for specifying an order		NSA3412D	NSA3413D	NSA3414D	NSA3415D			

\*1: If you require a product with a frequency not given above, please contact us. \*2: If you require a product with an operating temperature range not given above, please contact us.

### Dimensions



### Output Waveform <C-MOS>



### Standby Function

#1 Input	#3 Output
Level H ( $0.7 V_{DD} \leq V_{IH} \leq V_{DD}$ ) or OPEN is selected.	Oscillation output ON
Level L ( $V_{IL} \leq 0.3 V_{DD}$ ) is selected.	High impedance

### How to Specify an Order

When ordering our products, specify them with an "Ordering Code" that consists of the following:

[Model name] - [Frequency (up to 9 digits)]M - [Number for specifying an order]

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/>).

Example 1: When ordering a product with model name: NZ2520SB, frequency: 20 MHz, frequency stability:  $\pm 20 \times 10^{-6}$ , and power supply voltage: 1.8 V  
Ordering Code: NZ2520SB - 20.000000M - NSA3412D  
Example 2: When ordering a product with model name: NZ2520SB, frequency: 20 MHz, frequency stability:  $\pm 20 \times 10^{-6}$ , and power supply voltage: 3.3 V  
Ordering Code: NZ2520SB - 20.000000M - NSA3415D