Crystal Clock Oscillator

NDK
Crystal Bridge to the Future

NZ2520S Series

■ Model name

NZ2520SB Overall frequency tolerance of ±20 x 10⁻⁶.

■ Application

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

■ Features

- Compact and light. Dimensions : 2.5 x 2.0 x 0.9 mm, weight : 0.02 g.
- 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 2011/65/EU

Absolute maximum rating
Supply voltage (V_{DD}) –0.5 to +4.0 V
Storage temperature range –55 to +125 °C

■ Specifications

Item	Model		NZ2520SB							
Output level			CMOS							
Nominal frequency range *1		(MHz)	1.5 ≤ F < 10	10 ≤ F < 20	20 ≤ F < 30	30 ≤ F < 40	40 ≤ F < 50	50 ≤ F < 60	60 ≤ F < 70	70 ≤ F ≤ 80
Operating temperature range *2		(°C)	–10 to +60							
Overall frequency tolerance		(×10⁻⁶)	±20							
Current consumption max	During operation	+1.8 V, 25 °C	2.5	3.5	4.0	4.5	5.0	5.5	6.0	6.5
		+2.5 V, 25 °C (mA)	3.0	4.0	4.5	5.0	5.5	6.0	6.5	7.0
		+3.0 V, 25 °C	3.5	4.5	5.0	5.5	6.0	6.5	7.5	8.5
		+3.3 V, 25 °C	3.5	4.5	5.0	5.5	6.0	7.0	8.0	9.0
	During standby	+1.8 V to +3.3 V, 25 °C (µA)	10							
V_{OL} max/V_{OH} min		(V)	0.1 V_{DD}/0.9 V_{DD}							
Tr max/Tf max		(ns)	5/5							
Symmetry min. to max.		(%)	45 to 55							
Load (C_L) max		(pF)	15							
Start-up time max		(ms)	4							
Standby function			Available (tristate)							

*1: If you require a product with a frequency not given above, please contact us.
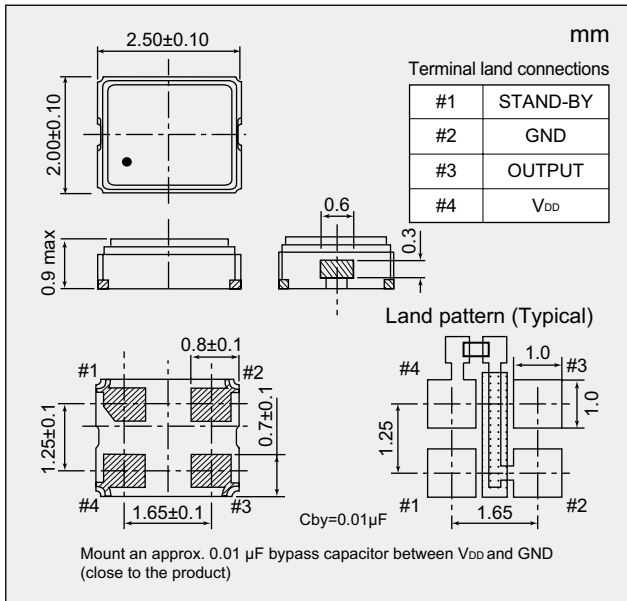
*2: If you require a product with an operating temperature range not given above, please contact us.
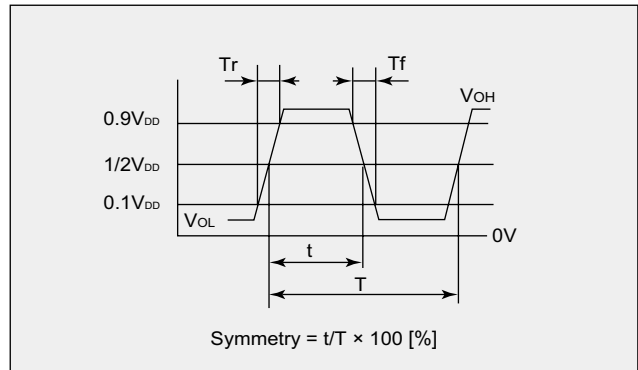
■ List of Codes for Placing an Order

List of Codes for Placing an Order (The purchase order number differs according to the difference in supply voltage.)		NSA3412D	NSA3413D	NSA3414D	NSA3415D
Supply voltage (V_{DD})	(V)	+1.8±0.1	+2.5±0.1	+3.0±0.1	+3.3±0.1

NIHON DEMPA KOGYO CO.,LTD.

12A_0906_NZ2520SB_20_e

Crystal Clock Oscillator

NZ2520S Series

■ Dimensions

mm

Terminal land connections

#1	STAND-BY
#2	GND
#3	OUTPUT
#4	V_{DD}

2.50±0.10

2.00±0.10

0.9 max

0.6

0.3

Land pattern (Typical)

0.8±0.1

1.25±0.1

0.7±0.1

#1   #2

#4   #3

1.65±0.1

Cby=0.01μF

#4   1.0   #3

1.25   1.0

#1   1.65   #2

Mount an approx. 0.01 μF bypass capacitor between V_{DD} and GND
(close to the product)

■ Output Waveform <CMOS>

Tr   Tf

V_{OH}

$0.9V_{DD}$

$1/2V_{DD}$

$0.1V_{DD}$

V_{OL}

0V

t

T

Symmetry = t/T × 100 [%]

■ 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 |

Example 1: When ordering a product with model name: NZ2520SB, frequency: 20 MHz, overall frequency tolerance: ±20 x 10⁻⁶,
and supply voltage: 1.8 V
Ordering Code: NZ2520SB – 20.000000M – NSA3412D

Example 2: When ordering a product with model name: NZ2520SB, frequency: 20 MHz, overall frequency tolerance: ±20 x 10⁻⁶,
and supply voltage: 3.3 V
Ordering Code: NZ2520SB – 20.000000M – NSA3415D

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/).