Crystal Clock Oscillator

Crystal Bridge to the Future

NZ2520S Series

■ Model name

NZ2520SB Frequency stability of ±50 x 10^{-6}.

Pb Free

RoHS Compliant Directive 2002/95/EC

■ Application

- For compact mobile information equipment, such as DVC, DSC, notebook PC, and PDA

■ Features

- Compact and light. Dimensions and weight: 2.5 x 2.0 mm, 0.9 mm, and 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.

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

■ Specifications

Item			Model	NZ2520SB							
Output level				C–MOS							
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 +70							
Frequency Stability			(×10^{-6})	±50							
Current consumption max	During operation	+1.8 V, 25 °C	(mA)	2.5	3.5	4.0	4.5	5.0	5.5	6.0	6.5
		+2.5 V, 25 °C		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							
Duty Cycle min. to max.			(%)	45 to 55							
Load (C_L) max			(pF)	15							
Oscillation start 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 power supply voltage.)		NSA3412B	NSA3413B	NSA3414B	NSA3415B
Power supply voltage [V_{DD}]	(V)	+1.8±0.18	+2.5±0.25	+3.0±0.3	+3.3±0.33

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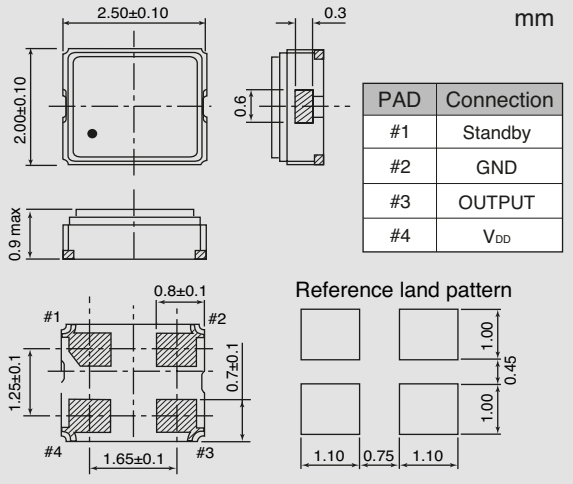
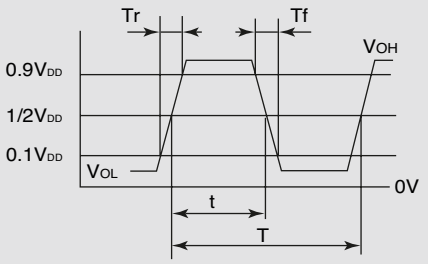
■ Dimensions



PAD	Connection
#1	Standby
#2	GND
#3	OUTPUT
#4	V_{DD}

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

■ Output Waveform <C–MOS>



Duty Cycle = 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, frequency stability: ±50 x 10^{-6}, and power supply voltage: 1.8 V
Ordering Code: NZ2520SB – 20.000000M – NSA3412B

Example 2: When ordering a product with model name: NZ2520SB, frequency: 20 MHz, frequency stability: ±50 x 10^{-6}, and power supply voltage: 3.3 V
Ordering Code: NZ2520SB – 20.000000M – NSA3415B

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/).