Crystal Clock Oscillator

Crystal Bridge to the Future

NZ2520S Series — Low Phase Noise Type

■ Model name

NZ2520SD Frequency stability of ±100 x 10^{-6}.

■ Application

- For wireless LAN

Pb Free

RoHS Compliant
Directive 2002/95/EC

Absolute maximum rating
Power supply voltage (V_{DD}) –0.6 to +6.0 V
Storage temperature range –55 to +125 °C

■ Features

- Low phase noise, low voltage, low consumption current, and high stability, make this product ideal for wireless LAN.
- Compact and light. Dimensions and weight: 2.5 x 2.0 mm, 0.9 mm, and 0.02 g.
- Automatic mounting by taping and IR reflow (lead-free) are possible.
- Lead-free.

■ Specifications

Item			Model	NZ2520SD	
Output level				C–MOS	
Frequency range *1			(MHz)	20 ≤ F < 30	30 ≤ F ≤ 40
Operating temperature range *2			(°C)	–20 to +70	
Frequency Stability			(×10^{-6})	±100	
Current consumption max	During operation	+1.8 V, 25 °C	(mA)	2.5	3.5
		+2.5 V, 25 °C		3.5	4.5
		+2.8 V, 25 °C		4.0	5.0
		+3.3 V, 25 °C		4.5	5.5
	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)	6/6	
Duty Cycle min. to max.			(%)	45 to 55	
Load (C_L) max			(pF)	15	
Oscillation start time max			(ms)	4	
Standby function				Available (tristate)	
Phase noise		+1.8 V, 25 °C	(dBc/Hz)	Fout±1 kHz : –143 (Typ) Fout±100 kHz : –156 (Typ)	
		+2.5 to +3.3 V, 25 °C		Fout±1 kHz : –145 (Typ) Fout±100 kHz : –158 (Typ)	

*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.)		NSA3446A	NSA3447A	NSA3448A	NSA3449A
Power supply voltage [V_{DD}]	(V)	+1.8±0.18	+2.5±0.25	+2.8±0.28	+3.3±0.33

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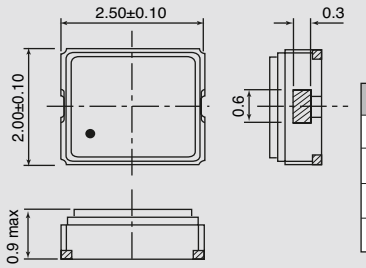
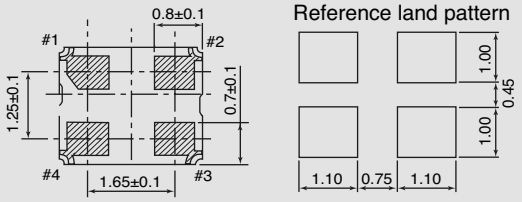
■ Dimensions

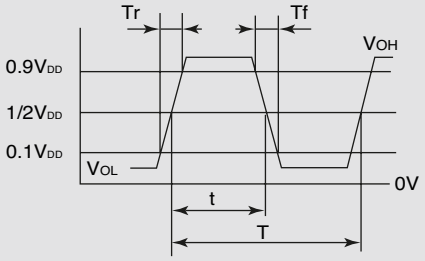


PAD	Connection
#1	Standby
#2	GND
#3	OUTPUT
#4	V_{DD}



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} ≤ V_{IH} ≤ V_{DD}) or OPEN is selected.	Oscillation output ON
Level L (V_{IL} ≤ 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: NZ2520SD, frequency: 20 MHz, frequency stability: ±100 x 10^{-6}, and power supply voltage: 1.8 V
Ordering Code: NZ2520SD – 20.000000M – NSA3446A

Example 2: When ordering a product with model name: NZ2520SD, frequency: 20 MHz, frequency stability: ±100 x 10^{-6}, and power supply voltage: 3.3 V
Ordering Code: NZ2520SD – 20.000000M – NSA3449A

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/).