

# Crystal Clock Oscillator

## NZ2520S Series

## Low Phase Noise Type

### Model name

NZ2520SD Overall frequency tolerance of  $\pm 50 \times 10^{-6}$ .

### Application

- For wireless LAN



Pb  
Free

RoHS Compliant  
Directive 2011/65/EU

### Features

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

Absolute maximum rating  
Supply voltage ( $V_{DD}$ )  $-0.6$  to  $+6.0$  V  
Storage temperature range  $-55$  to  $+125$  °C

### Specifications

Item			Model	NZ2520SD					
Output level				CMOS					
Nominal frequency range *1			(MHz)	$1.5 \leq F < 10$	$10 \leq F < 20$	$20 \leq F < 30$	$30 \leq F \leq 40$	$40 < F < 50$	$50 \leq F \leq 60$
Operating temperature range *2			(°C)	$-40$ to $+85$					
Overall frequency tolerance			( $\times 10^{-6}$ )	$\pm 50$					
Current consumption max	During operation	$+3.3$ V, $25$ °C	(mA)	3.5	4.0	4.5	5.5	6.0	6.5
	During standby	$+3.3$ V, $25$ °C	( $\mu$ A)	10					
$V_{OL\ max}/V_{OH\ min}$			(V)	$0.1 V_{DD}/0.9 V_{DD}$					
$T_r\ max/T_f\ max$			(ns)	6/6					
Symmetry min. to max.			(%)	45 to 55					
Load ( $C_L$ ) max			(pF)	15					
Start-up time max			(ms)	4					
Standby function				Available (tristate)					
Phase noise		$+3.3$ V, $25$ °C	(dBc/Hz)	$F_{out} \pm 1$ kHz : $-145$ (Typ) $F_{out} \pm 100$ kHz : $-158$ (Typ)					

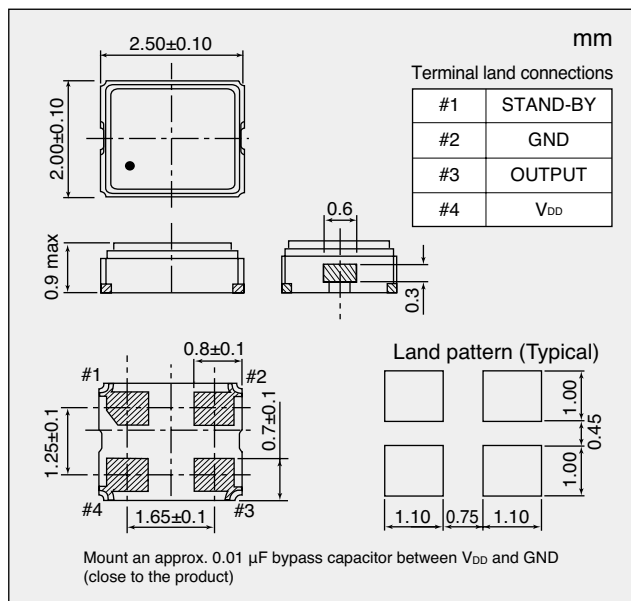
\*1: If you require a product with a frequency not given above, please contact us.

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

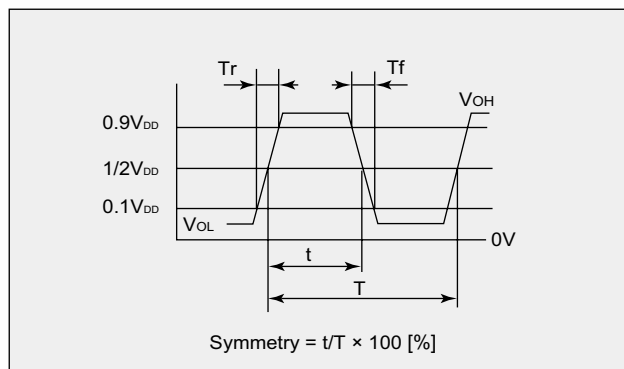
### List of Codes for Placing an Order

List of Codes for Placing an Order		NSA3449E
Supply voltage	(V)	$+3.3 \pm 0.33$

### ■ Dimensions



### ■ Output Waveform <CMOS>



### ■ 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 : When ordering a product with model name: NZ2520SD, frequency: 20 MHz, overall frequency tolerance:  $\pm 50 \times 10^{-6}$ , and supply voltage: 3.3 V

Ordering Code: NZ2520SD – 20.000000M – NSA3449E

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/>).