

# Crystal Clock Oscillator **NEW**

## NZ2520S Series

## Ultralow Power-Driven Type

### Model name

NZ2520SF Overall frequency tolerance of  $\pm 100 \times 10^{-6}$ .

### Application

- For Portable equipment (ex. Mobile Phone, Digital Media Player, PND, Notebook PC, etc)



Pb Free

RoHS Compliant  
Directive 2002/95/EC

### Features

- Ultralow power-driven (0.8V min) crystal clock oscillator, ideal for mobile devices.
- 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 1.0MHz) not easily achieved with crystal units of the same size.
- Taped units enable automatic mounting and IR Reflow (lead free) is possible.
- Lead-free.

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

### Specifications

Item	Model	NZ2520SF	
Output level		CMOS	
Nominal frequency range <sup>*1</sup>	(MHz)	$1.0 \leq F \leq 50$	
Operating temperature range <sup>*2</sup>	(°C)	$-20$ to $+70$	
Overall frequency tolerance	( $\times 10^{-6}$ )	$\pm 100$	
Current consumption max	During operation	+0.9 V, 25 °C (mA)	3.5
		+1.2 V, 25 °C	5.0
		+1.5 V, 25 °C	6.0
	During standby	+0.9 V to +1.5 V, 25 °C ( $\mu$ A)	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.

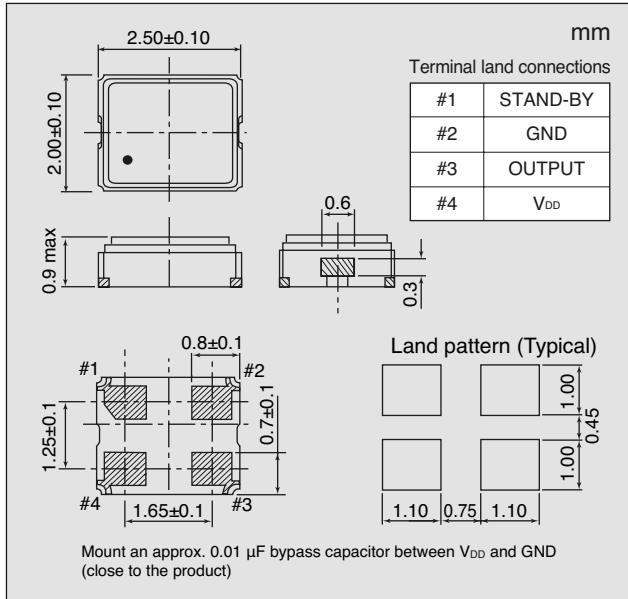
\*2: If you require a product with an operating temperature range not given above, please contact us.

### List of Codes for Placing an Order

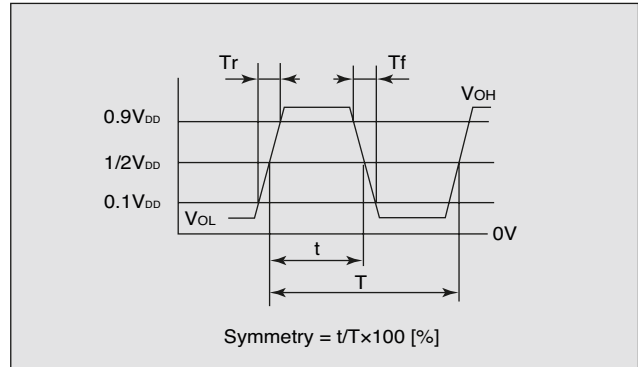
List of Codes for Placing an Order	NSA3468A	NSA3477A	NSA3469A
Supply voltage (V)	$+0.9 \pm 0.1$	$+1.2 \pm 0.1$	$+1.5 \pm 0.1$

## NZ2520S Series Ultralow Power-Driven Type

### ■ 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 1: When ordering a product with model name: NZ2520SF, frequency: 20 MHz, overall frequency tolerance:  $\pm 100 \times 10^{-6}$ , and power supply voltage: 0.9 V

Ordering Code: NZ2520SF – 20.000000M – NSA3468A

Example 2: When ordering a product with model name: NZ2520SF, frequency: 20 MHz, overall frequency tolerance:  $\pm 100 \times 10^{-6}$ , and power supply voltage: 1.5 V

Ordering Code: NZ2520SF – 20.000000M – NSA3469A

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/>).