

# Crystal Clock Oscillator

## NZ2520SEA

## High-precision Crystal Clock Oscillator

### Application

- WiLAN, WiMAX, Bluetooth, PLC, UWB, Car-electronics connection.

### Features

This device is a new SPXO of hold over frequency tolerance as tight as  $\pm 15 \times 10^{-6}$  (-40 to +85°C) by building a temperature compensating circuit in it. CMOS output despite temperature compensated circuit. This device reduces harmonics level to prevent the interference with the radio frequency by the wireless communication use.

- Overall Frequency Tolerance Max.  $\pm 15 \times 10^{-6}$  at -40 to +85°C.
- CMOS output
- Harmonics level reduce.
- Conventional ratio about -17dBm at Output 40MHz,  $V_{CC}$  2.8V, 2.4GHz band.
- Supply voltage :  $1.8 \pm 0.09V$ ,  $2.5 \pm 0.125V$ ,  $3.3 \pm 0.165V$ . \*1
- Package Size : 2.5 x 2.0 x 0.8mm



Pb Free

RoHS Compliant  
Directive 2011/65/EU

Absolute maximum rating  
Supply Voltage ( $V_{CC}$ ) -0.6 to +6.0 V  
Storage Temperature Range -55 to +125 °C

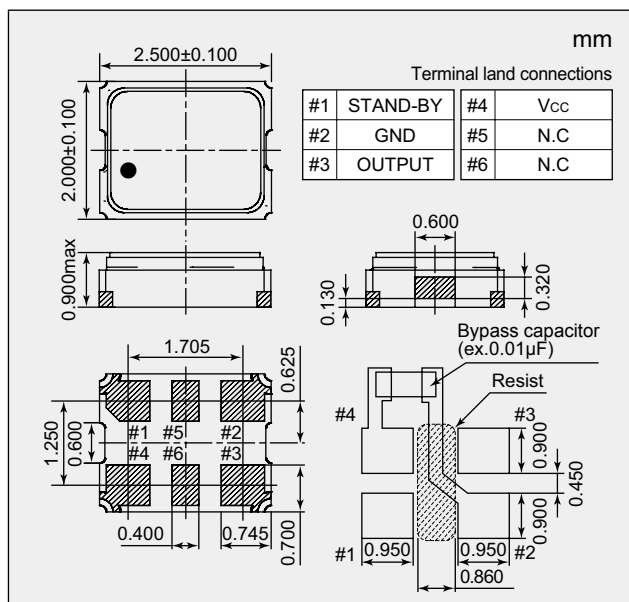
\*1: Please specify one supply voltage.

### Specifications

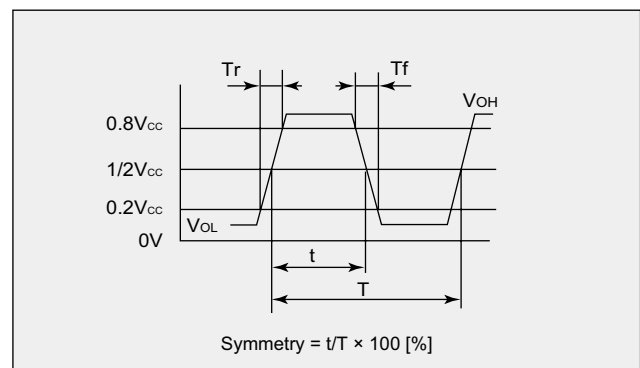
Item		Model	NZ2520SEA					
Output Level			CMOS					
Nominal Frequency Range		(MHz)	$2.75 \leq F < 11$	$11 \leq F < 22$	$22 \leq F < 30$	$30 \leq F < 40$	$40 \leq F \leq 54$	
Operating Temperature Range		(°C)	-40 to +85					
Overall Frequency Tolerance *2 Max.		( $\times 10^{-6}$ )	$\pm 15$					
Current Consumption Max.	During Operation	+1.8 V, +25 °C	(mA)	3.5	4.0	4.5	5.0	6.0
		+2.5 V, +25 °C		4.0	4.5	5.0	5.5	6.5
		+3.3 V, +25 °C		4.5	5.0	5.5	6.0	8.0
	During Standby	+1.8 to +3.3 V, +25 °C	( $\mu$ A)	10				
$V_{OL}$ Max. / $V_{OH}$ Min.		(V)	$0.2 V_{CC} / 0.8 V_{CC}$					
$T_r$ Max. / $T_f$ Max.		(ns)	5/5 ( at 0.2 to 0.8V <sub>CC</sub> )					
Symmetry Min. to Max.		(%)	45 to 55 ( at 1/2V <sub>CC</sub> )					
Load (C <sub>L</sub> ) Max.		(pF)	15					
Start-up Time Max.		(ms)	10					
Standby function			Available (Three-state)					

\*2: Inclusive of +25°C tolerance, temp. characteristics, and supply voltage change.

### Dimensions



### Output Waveform <CMOS>



### Standby Function

#1 Input	#3 Output
Level H ( $0.8 V_{CC} \leq V_{IH} \leq V_{CC}$ ) or OPEN	Operating
Level L ( $V_{IL} \leq 0.2 V_{CC}$ )	High impedance

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### ■ Specification Number

Overall Frequency Tolerance	Operating Temperature Range(°C)	Supply Voltage (V)		
		+1.8±0.09	+2.5±0.125	+3.3±0.165
±100×10 <sup>-6</sup>	-40 to +125	NSA3513A	NSA3513B	NSA3513C

Please specify the model name, frequency, and specification number when you order products.  
For further questions regarding specifications, please feel free to contact us.