

# Crystal Clock Oscillator

## NZ2520SHB

## Low current consumption Type (32.768kHz)

### Application

For Smartphone and Tablet computer etc.

### Features

- Supports a wide temperature range from -40 to +125°C.
- Compact and light. Dimensions : 2.5 x 2.0 x 0.9 mm, weight : 0.02 g.
- Quick oscillation start up time is available compared to our Tuning Fork Crystal.
- Conforms to AEC-Q200.



Pb Free

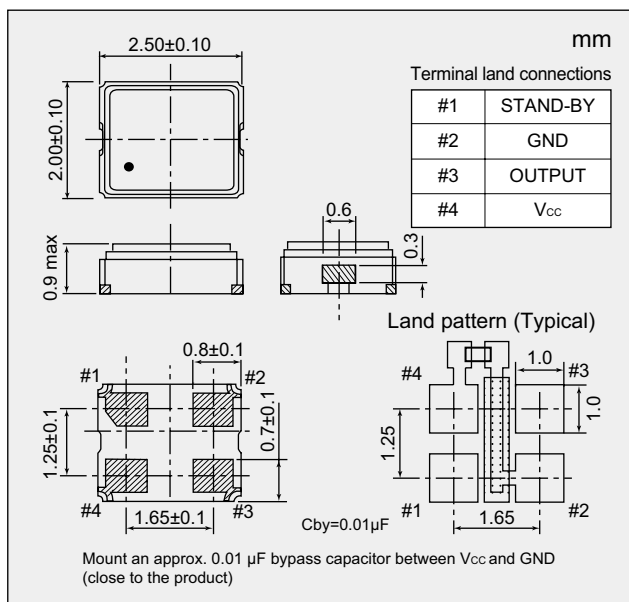
RoHS Compliant  
Directive 2011/65/EU

Absolute maximum rating  
Supply Voltage (V<sub>CC</sub>) -0.3 to +4.5 V  
Storage Temperature Range -55 to +125 °C

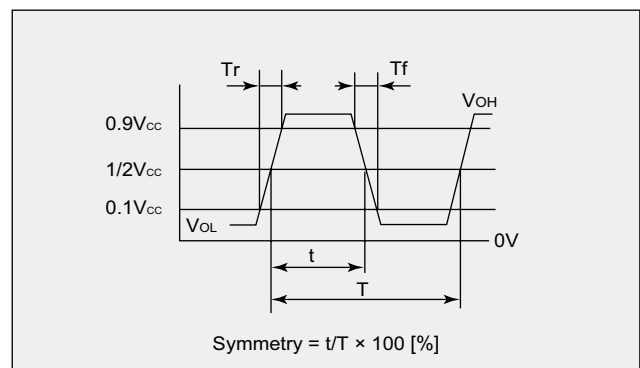
### Specifications

Item	Model	NZ2520SHB		
Output Specification		CMOS		
Nominal Frequency	(kHz)	32.768		
Overall Frequency Tolerance	(×10 <sup>-6</sup> )	±100	±50	±50
Operating Temperature Range	(°C)	-40 to +125	-40 to +105	-40 to +85
Supply Voltage (V <sub>CC</sub> )	(V)	1.8 to +3.3		
Current Consumption Max.	During Operation	+25°C	18 (μA)	
	During Standby	+25°C	5 (μA)	
V <sub>OL</sub> Max. / V <sub>OH</sub> Min.	(V)	0.1 V <sub>CC</sub> / 0.9 V <sub>CC</sub>		
Tr Max. / Tf Max.	(ns)	50 / 50 (at 0.1V <sub>CC</sub> to 0.9V <sub>CC</sub> )		
Symmetry Min. to Max.	(%)	45 to 55 (at 0.5V <sub>CC</sub> )		
Load (C <sub>L</sub> ) Max.	(pF)	15		
Start-up Time Max.	(ms)	20		
Frequency Aging Max.	(×10 <sup>-6</sup> )	±5 (+25°C, First year)		
Standby function		Available (Three-state)		

### Dimensions



### Output Waveform <CMOS>



### Standby Function

#1 Input	#3 Output
Level H ( $0.7 V_{CC} \leq V_{IH} \leq V_{CC}$ ) or OPEN is selected.	Oscillation output ON
Level L ( $V_{IL} \leq 0.3 V_{CC}$ ) is selected.	High impedance

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### ■ Specification Number

Overall Frequency Tolerance	Operating Temperature Range (°C)	Supply Voltage (V)			
		+1.8±0.18	+2.5±0.25	+3.0±0.3	+3.3±0.33
±100 × 10 <sup>-6</sup>	-40 to +125	NSC5135A	NSC5135B	NSC5135C	NSC5135D
±50 × 10 <sup>-6</sup>	-40 to +105	NSC5136A	NSC5136B	NSC5136C	NSC5136D
±50 × 10 <sup>-6</sup>	-40 to +85	NSC5137A	NSC5137B	NSC5137C	NSC5137D

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