Crystal Clock Oscillator

NZ2520SH Standard 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(Typ. 1ms) is available compared to our Tuning Fork Crystal.
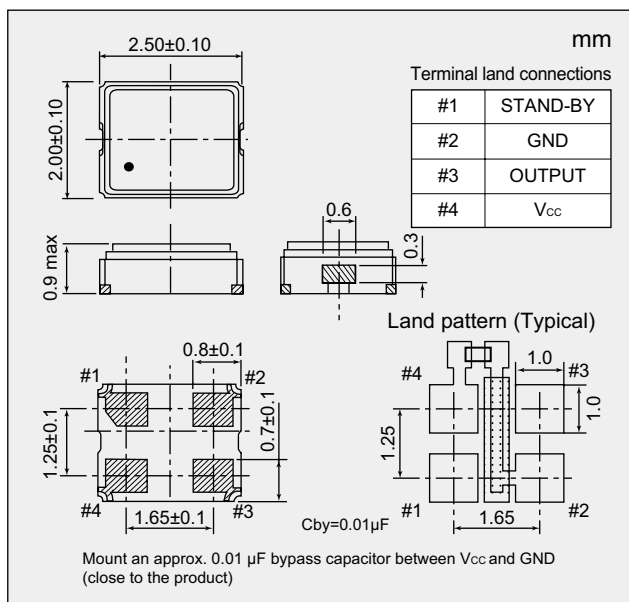
● Conforms to AEC-Q200.

Pb Free

RoHS Compliant
Directive 2011/65/EU

Absolute maximum rating
Supply Voltage (V_{CC}) –0.3 to +7.0 V
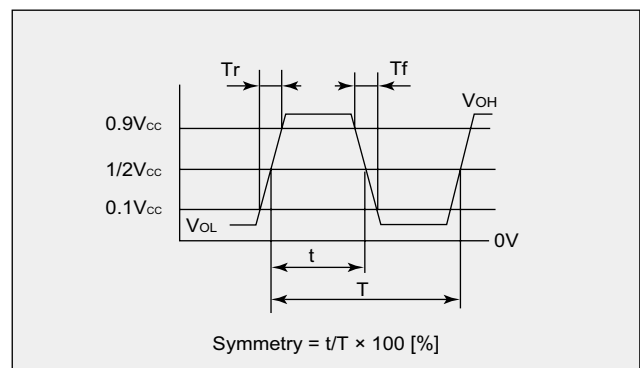Storage Temperature Range –55 to +125 °C

■ Specifications

Item			Model	NZ2520SH		
Output				CMOS		
Nominal Frequency			(kHz)	32.768		
Overall Frequency Tolerance			($\times 10^{-6}$)	±100	±50	±30
Operating Temperature Range			(°C)	–40 to +125	–40 to +105	–40 to +85
Supply Voltage (V_{CC})			(V)	1.8 to +3.3		
Current Consumption Max.	During Operation	+25°C	(µA)	160 to 180		
	During Standby	+25°C	(µA)	20		
V_{OL} Max. / V_{OH} Min.			(V)	0.1 V_{CC} / 0.9 V_{CC}		
Tr Max. / Tf Max.			(ns)	200 / 200 (at 0.1V_{CC} to 0.9V_{CC})		
Symmetry Min. to Max.			(%)	45 to 55 (at 0.5V_{CC})		
Load (C_L) Max.			(pF)	15		
Start-up Time Max.			(ms)	4 (Typ. 1ms)		
Frequency Aging Max.			($\times 10^{-6}$)	±5 (+25°C, First year)		
Standby function				Available (Three-state)		

■ Dimensions

mm

2.50±0.10

2.00±0.10

0.9 max

0.6

0.3

Terminal land connections

#1	STAND-BY
#2	GND
#3	OUTPUT
#4	V_{CC}

Land pattern (Typical)

0.8±0.1

#1   #2

1.25±0.1

0.7±0.1

#4   #3

1.65±0.1

Cby=0.01µF

1.0

#4   #3

1.25

1.0

#1   1.65   #2

Mount an approx. 0.01 µF bypass capacitor between V_{CC} and GND (close to the product)

■ Output Waveform <CMOS>

Tr   Tf

0.9V_{CC}

1/2V_{CC}

0.1V_{CC}

V_{OH}

V_{OL}

0V

t

T

Symmetry = t/T × 100 [%]

■ Standby Function

#1 Input	#3 Output
Level H (0.7 V_{CC} ≤ V_{IH} ≤ V_{CC}) or OPEN is selected.	Oscillation output ON
Level L (V_{IL} ≤ 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^{-6}	–40 to +125	NSC5013A	NSC5013B	NSC5013C	NSC5013D
±50 × 10^{-6}	–40 to +105	NSC5015A	NSC5015B	NSC5015C	NSC5015D
±30 × 10^{-6}	–40 to +85	NSC5018A	NSC5018B	NSC5018C	NSC5018D

Please specify the model name, frequency, and specification number when you order products.

For further questions regarding specifications, please feel free to contact us.