Crystal Clock Oscillator NEW

NDK Crystal Bridge to the Future

NZ2520SHA — For Automotive safety (32.768kHz)

■ Application

For Automotive safety (e.g., Millimeter wave radar or Image processing for self-driving)

■ Features

- High quality and high reliability design for Automotive safety
- 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-Q100/200.

Pb Free

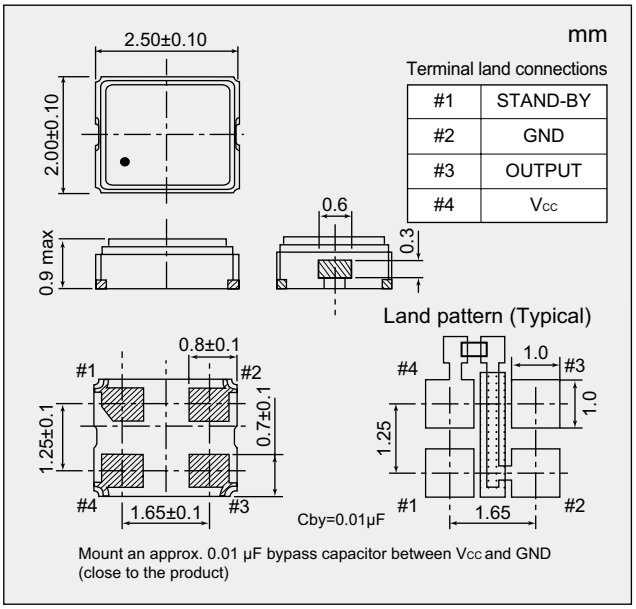
RoHS Compliant
Directive 2011/65/EU
Directive (EU) 2015/863

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

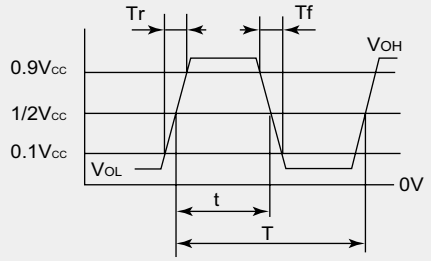
■ Specifications

Item	Model			NZ2520SHA		
Output Specification				CMOS		
Nominal Frequency			(kHz)	32.768		
Overall Frequency Tolerance			(×10⁻⁶)	±100	±50	±50
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)	220 to 260		
	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.			(×10⁻⁶)	±5 (+25°C, First year)		
Standby function				Available (Three-state)		

■ Dimensions



■ Output Waveform <CMOS>



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	NSC5222A	NSC5222B	NSC5222C	NSC5222D
±50 × 10^{-6}	–40 to +105	NSC5223A	NSC5223B	NSC5223C	NSC5223D
±50 × 10^{-6}	–40 to +85	NSC5224A	NSC5224B	NSC5224C	NSC5224D

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