Crystal Clock Oscillator

NDK Crystal Bridge to the Future

NZ2016SH

Standard Type

■ Application

For Automotive navigation system, Automotive audio equipment and Camera
For Smartphone, Tablet computers, Notebook PC, PC card, etc.
For Audioequipment and Wireless module
For Communication equipment for SDH/SONET, WiMAX, LTE, etc. and Base station



Pb Free

RoHS Compliant
Directive 2011/65/EU

■ Features

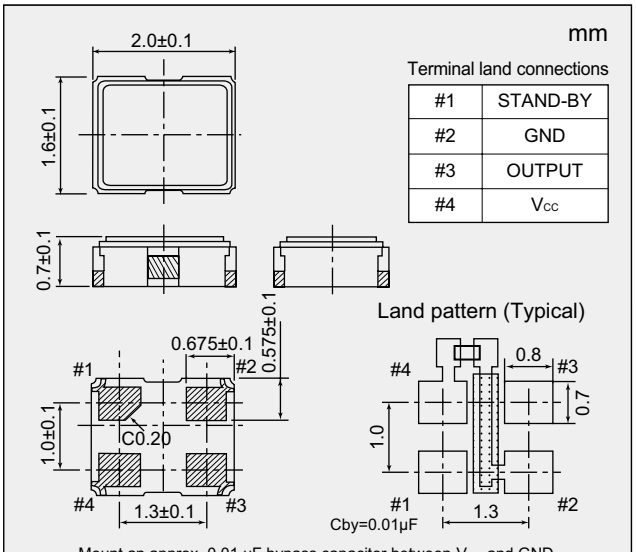
- Supports a wide temperature range from –40 to +125°C.
- Ultra compact and light. Dimensions : 2.0 x 1.6 x 0.7 mm, weight : 0.01 g.
- This crystal clock oscillator can support low frequencies (from 1.5MHz) not easily achieved with crystal units of the same size.
- Taped units enable automatic mounting IR Reflow (lead free) is possible.
- Lead-free.
- Conforms to AEC-Q200.

Absolute maximum rating	
Supply Voltage (V_{CC})	–0.3 to +4.0 V
Storage Temperature Range	–55 to +125 °C

■ Specifications

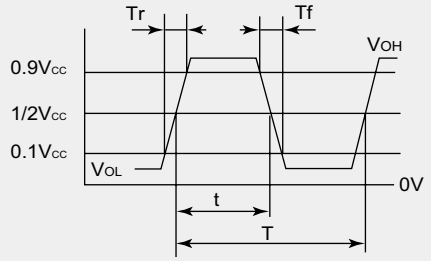
Item			Model	NZ2016SH			
Output Level				CMOS			
Nominal Frequency Range			(MHz)	1.5 to 80			
Overall Frequency Tolerance			(×10⁻⁶)	±100	±50	±30	±20
Operating Temperature Range			(°C)	–40 to +125	–40 to +105	–10 to +70	–10 to +60
Supply Voltage			(V)	+1.8 to +3.3			
Current Consumption Max.	During Operation	+25 °C	(mA)	2.5 to 9.0			
	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.		+1.8 V	(ns)	6 / 6 (at 0.1 V_{CC} to 0.9 V_{CC})			
		+2.5 to +3.3V		5 / 5 (at 0.1 V_{CC} to 0.9 V_{CC})			
Symmetry Min. to Max.			(%)	45 to 55			
Load (C_L) Max.			(pF)	15			
Start-up Time Max.			(ms)	4			
Standby function				Available (Three-state)			

■ Dimensions



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

■ 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	NSC5019A	NSC5019B	NSC5019C	NSC5019D
± 50 × 10^{-6}	–40 to +105	NSC5021A	NSC5021B	NSC5021C	NSC5021D
± 30 × 10^{-6}	–10 to +70	NSC5024A	NSC5024B	NSC5024C	NSC5024D
± 20 × 10^{-6}	–10 to +60	NSC5025A	NSC5025B	NSC5025C	NSC5025D

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