

# Crystal Clock Oscillator NEW

## NZ2016S Series

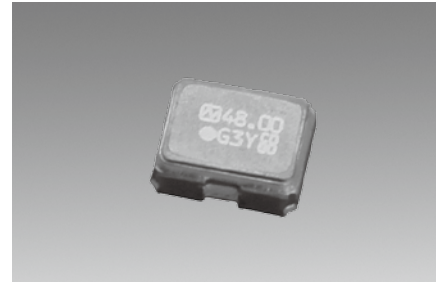
## Wide Operating Temperature Range Type

### Model name

NZ2016SG

### Application

- For Automotive navigation system, automotive audio equipment, and camera.
- For Camcorder, DSC, notebook PC, and PDA.



Pb Free

RoHS Compliant  
Directive 2011/65/EU

### Features

- Supports a wide temperature range : -40 to 105°C.
- Ultra-compact and light. Dimensions : 2.0 x 1.6 x 0.7 mm, weight : 0.01 g.
- Supply voltage of +3.3 V ideal for low-power and power-saving type products.
- Seam sealing gives high reliability.
- Wide frequency range: 1.5 to 80 MHz.
- Automatic mounting by taping and IR reflow (lead-free) are possible.
- Lead-free.
- Conforms to AEC-Q200.

Absolute maximum rating  
Supply voltage (V<sub>CC</sub>) -0.5 to +4.0 V  
Storage temperature range -55 to +125 °C

### Specifications

Item		Model	NZ2016SG								
Output level			CMOS								
Nominal frequency range *1		(MHz)	1.5 ≤ F < 10	10 ≤ F < 20	20 ≤ F < 30	30 ≤ F < 40	40 ≤ F < 50	50 ≤ F < 60	60 ≤ F < 70	70 ≤ F ≤ 80	
Operating temperature range *2		(°C)	-40 to +105								
Overall frequency tolerance		(×10 <sup>-6</sup> )	±50, ±100								
Current consumption max	During operation	+1.8 V, 25 °C	(mA)	2.5	3.5	4.0	4.5	5.0	5.5	6.0	6.5
		+2.5 V, 25 °C		3.0	4.0	4.5	5.0	5.5	6.0	6.5	7.0
		+3.0 V, 25 °C		3.5	4.5	5.0	5.5	6.0	6.5	7.5	8.5
		+3.3 V, 25 °C		3.5	4.5	5.0	5.5	6.0	7.0	8.0	9.0
	During standby	+1.8 V to +3.3 V, 25 °C	(μA)	10							
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)	5/5								
Symmetry min. to max.		(%)	45 to 55								
Load (C <sub>L</sub> ) max		(pF)	15								
Start-up time max		(ms)	4								
Standby function			Available (Three-state)								

\*1: If you require a product with a frequency not given above, please contact us.

\*2: If you require a product with an operating temperature range not given above, please contact us.

### List of Codes for Placing an Order

Overall frequency tolerance : ±50×10<sup>-6</sup>

Supply voltage (V <sub>CC</sub> )	(V)	+1.8±0.18	+2.5±0.25	+3.0±0.3	+3.3±0.33
List of Codes for Placing an Order		NSA3584B	NSA3585B	NSA3586B	NSA3587B

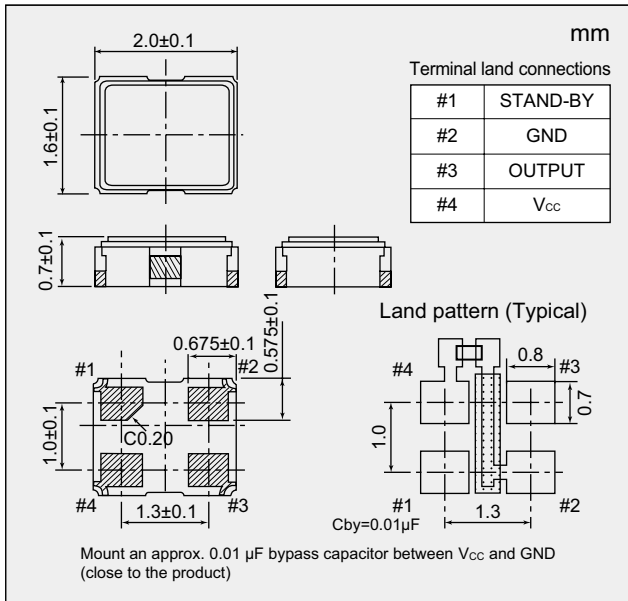
Overall frequency tolerance : ±100×10<sup>-6</sup>

Supply voltage (V <sub>CC</sub> )	(V)	+1.8±0.18	+2.5±0.25	+3.0±0.3	+3.3±0.33
List of Codes for Placing an Order		NSA3584A	NSA3585A	NSA3586A	NSA3587A

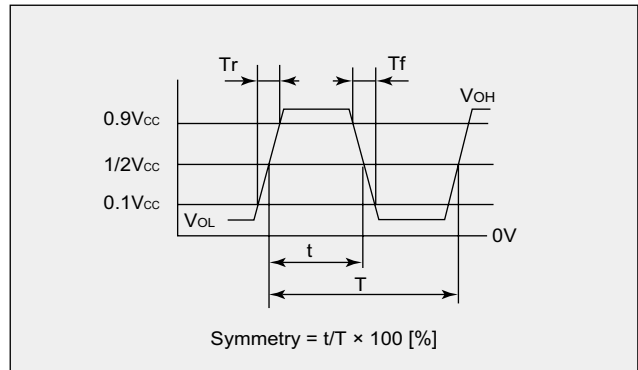
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### ■ Dimensions



### ■ 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

### ■ How to Specify an Order

When ordering our products, specify them with an "Ordering Code" that consists of the following:

Model name – Frequency (up to 9 digits) M – Number for specifying an order

Example 1: When ordering a product with model name: NZ2016SG, frequency: 48MHz, overall frequency tolerance:  $50 \times 10^{-6}$ , and supply voltage: 2.5 V

Ordering Code: NZ2016SG – 48.000000M – NSA3585B

Example 2: When ordering a product with model name: NZ2016SG, frequency: 48MHz, overall frequency tolerance:  $100 \times 10^{-6}$ , and supply voltage: 3.0 V

Ordering Code: NZ2016SG – 48.000000M – NSA3586A

If you have any queries concerning our standard frequencies and numbers for specifying orders, please contact our sales representatives or visit our homepage (<http://www.ndk.com/>).