

# Crystal Clock Oscillator

## NZ2016S Series

For OA, AV, and short-range wireless

### Model name

NZ2016SA Frequency stability of  $\pm 100 \times 10^{-6}$ .

### Application

- For mobile camera module, DVC, DSC, notebook PC, and PDA



Pb Free

RoHS Compliant  
Directive 2002/95/EC

### Features

- Ultra-compact and light. Dimensions and weight: 2.0 x 1.6 mm, 0.7 mm, and 0.01 g.
- Power supply voltage of +1.8 to +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.

Absolute maximum rating  
Power supply voltage ( $V_{DD}$ ) -0.5 to +4.0 V  
Storage temperature range -55 to +125 °C

### Specifications

Item	Model	NZ2016SA									
Output level		C-MOS									
Frequency range <sup>1</sup>	(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 <sup>2</sup>	(°C)	-20 to +70									
Frequency Stability	( $\times 10^{-6}$ )	$\pm 100$									
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	( $\mu$ A)	10							
$V_{OL} \text{ max}/V_{OH} \text{ min}$	(V)	0.1 $V_{DD}$ /0.9 $V_{DD}$									
$T_r \text{ max}/T_f \text{ max}$	(ns)	5/5									
Duty Cycle min. to max.	(%)	45 to 55									
Load ( $C_L$ ) max	(pF)	15									
Oscillation start time max	(ms)	4									
Standby function		Available (tristate)									

\*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

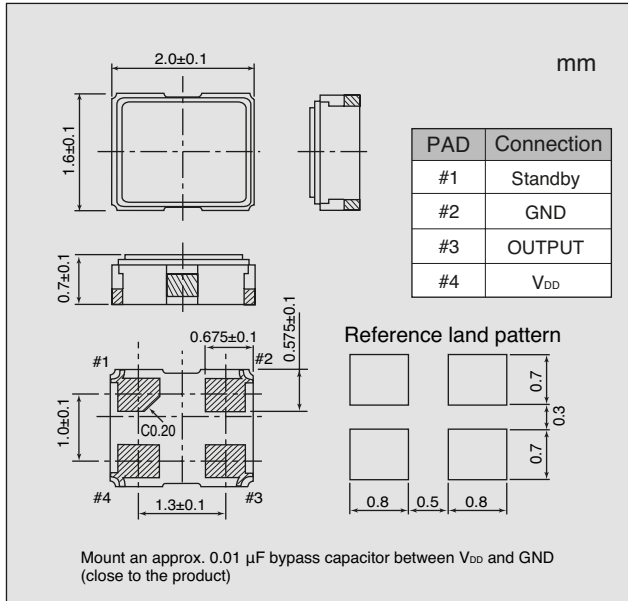
List of Codes for Placing an Order (The purchase order number differs according to the difference in power supply voltage.)	NSA3439A	NSA3440A	NSA3441A	NSA3442A	
Power supply voltage [ $V_{DD}$ ]	(V)	+1.8 $\pm$ 0.18	+2.5 $\pm$ 0.25	+3.0 $\pm$ 0.3	+3.3 $\pm$ 0.33

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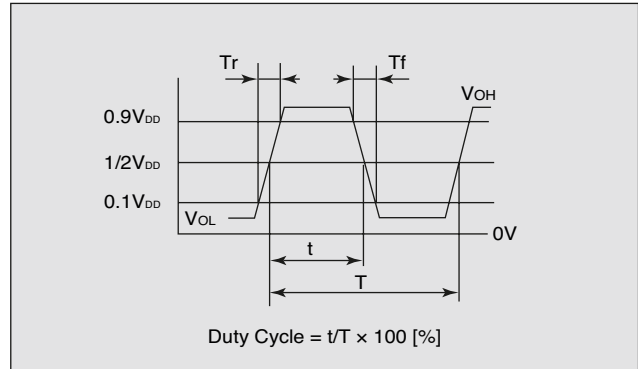
## NZ2016S Series

For OA, AV, and short-range wireless

### ■ Dimensions



### ■ Output Waveform <C-MOS>



### ■ Standby Function

#1 Input	#3 Output
Level H ( $0.7 V_{DD} \leq V_{IH} \leq V_{DD}$ ) or OPEN is selected.	Oscillation output ON
Level L ( $V_{IL} \leq 0.3 V_{DD}$ ) 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: NZ2016SA, frequency: 20 MHz, and power supply voltage: 2.5 V

Ordering Code: NZ2016SA – 20.000M – NSA3440A

Example 2: When ordering a product with model name: NZ2016SA, frequency: 20 MHz, and power supply voltage: 3.0 V

Ordering Code: NZ2016SA – 20.000M – NSA3441A

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/>).