

# Crystal Clock Oscillator

## NZ2016SF

## Ultralow Power-Driven Type

### ■ Application

- For Portable equipment (ex. Mobile Phone, Digital Media Player, PND, Notebook PC, etc)

### ■ Features

- Ultralow power-driven (Min. +0.8V) crystal clock oscillator, ideal for mobile devices.
- Ultra compact and light. Dimensions : 2.0 x 1.6 x 0.7 mm, weight : 0.01 g.
- Wide frequency range: 1.5 to 50 MHz.
- Taped units enable automatic mounting and IR Reflow (lead free) is possible.
- Lead-free.



Pb  
Free

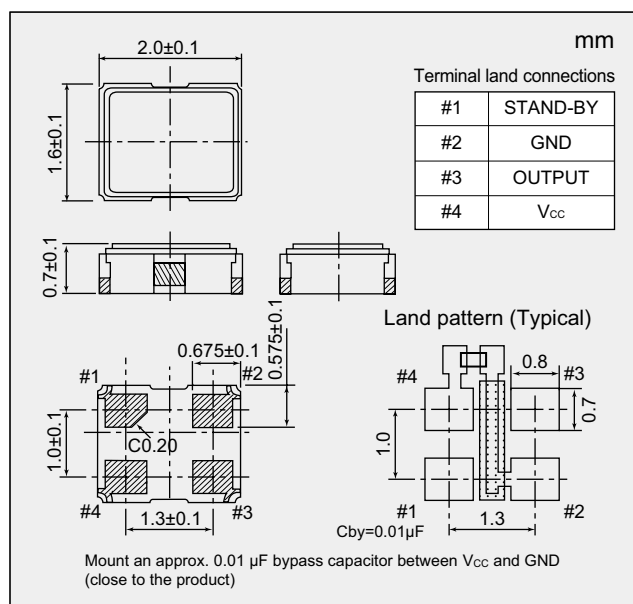
RoHS Compliant  
Directive 2011/65/EU

Absolute maximum rating  
Supply Voltage (V<sub>CC</sub>) -0.5 to +4.0 V  
Storage Temperature Range -55 to +125°C

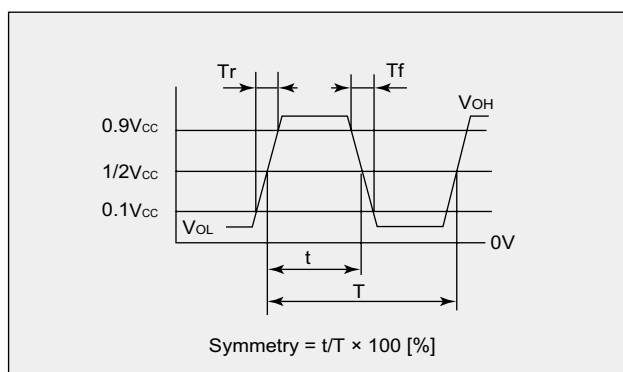
### ■ Specifications

| Item                                        |                  | Model                | NZ2016SF                                  |            |
|---------------------------------------------|------------------|----------------------|-------------------------------------------|------------|
| Output Specification                        |                  |                      | CMOS                                      |            |
| Nominal Frequency Range                     |                  | (MHz)                | 1.5 ≤ F ≤ 50                              |            |
| Overall Frequency Tolerance                 |                  | (×10 <sup>-6</sup> ) | ±50                                       | ±30        |
| Operating Temperature Range                 |                  | (°C)                 | -40 to +85                                | -10 to +70 |
| Supply Voltage                              |                  | (V)                  | +0.9 to +1.5                              |            |
| Current Consumption Max.                    | During Operation | +25 °C               | (mA)                                      | 1.5 to 6.0 |
|                                             | During Standby   | +25 °C               | (μA)                                      | 100        |
| 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)                   |            |

### ■ Dimensions



### ■ Output Waveform <CMOS>



### ■ Standby Function

| #1 Input                                                                                   | #3 Output             |
|--------------------------------------------------------------------------------------------|-----------------------|
| Level H (0.7 V <sub>CC</sub> ≤ V <sub>IH</sub> ≤ V <sub>CC</sub> )<br>or OPEN is selected. | Oscillation output ON |
| Level L (V <sub>IL</sub> ≤ 0.3 V <sub>CC</sub> ) is selected.                              | High impedance        |

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### ■ Specification Number

| Overall Frequency Tolerance | Operating Temperature Range (°C) | Supply Voltage (V) |          |          |
|-----------------------------|----------------------------------|--------------------|----------|----------|
|                             |                                  | +0.9±0.1           | +1.2±0.1 | +1.5±0.1 |
| ±50×10 <sup>-6</sup>        | -40 to +85                       | NSA3480E           | NSA3481E | NSA3482E |
| ±30×10 <sup>-6</sup>        | -10 to +70                       | NSA3480C           | NSA3481C | NSA3482C |

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

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