

# Crystal Oscillator

## Model Name NT2016SA

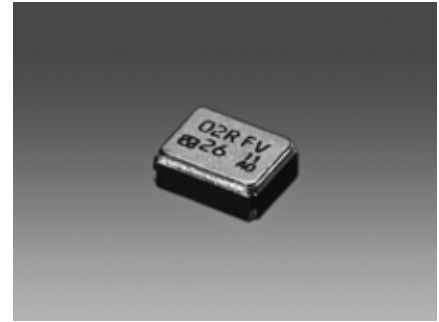
Temperature-Compensated Crystal Oscillator with AFC Function (VC-TCXO) NT2016S Series

### Main Application

For mobile phones, etc.

### Features

- Supports low power supply voltage. (Supports DC +1.7 V to +3.3 V.)
- Ultra-compact and light with a height, cubic volume, and weight of Max. 0.8 mm, 0.0022 cm<sup>3</sup>, and 0.008 g, respectively.
- With an AFC (Automatic Frequency Control) function.
- Low power consumption.
- A surface-mount crystal oscillator. (Reflow soldering is possible.)
- Lead-free. Meets the requirements for re-flow profiling using lead-free solder.



Pb Free

RoHS Compliant  
Directive 2011/65/EU

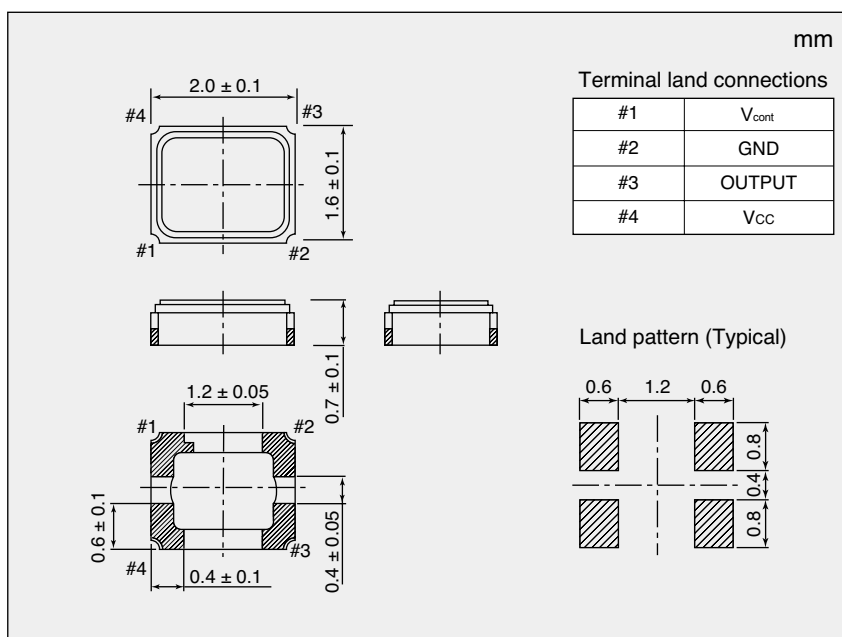
### Specifications

| Item                                  | Model | NT2016SA   |          |          |
|---------------------------------------|-------|--|----------|----------|
| Nominal frequency range (MHz)         |       | 13 to 52   |          |          |
| Standard frequency (MHz)              |       | 16.368, 16.369, 19.2, 26, 27.456                                   | 38.4     | 52       |
| Supply voltage [V <sub>CC</sub> ] (V) |       | +1.8   |          |          |
| Load impedance                        |       | 10 kΩ/10 pF  |          |          |
| Current consumption (mA)              |       | Max. 1.5   | Max. 1.7 | Max. 2.0 |
| Output voltage                        |       | Min. 0.8 V(p-p) (DC Coupling *1)                                   |          |          |
| Frequency/Temperature characteristics |       | Max. ±2.0×10 <sup>-6</sup>   |          |          |
| Operating temperature range (°C)      |       | -30 to +85   |          |          |
| Storage temperature range (°C)        |       | -40 to +85   |          |          |
| Frequency/Voltage coefficient         |       | Max. ±0.1×10 <sup>-6</sup> /+1.8 V±5 %                             |          |          |
| Frequency/Load coefficient            |       | Max. ±0.1×10 <sup>-6</sup> /(10 kΩ/10 pF) ±10 %                    |          |          |
| Long-term frequency stability         |       | Max. ±1.0×10 <sup>-6</sup> /year                                   |          |          |
| Frequency control range               |       | ±8.0×10 <sup>-6</sup> to ±13.0×10 <sup>-6</sup> /+0.9 V±0.8 V (*2) |          |          |

#### Frequency setting conditions

1. Frequencies are set at normal temperatures (+25±2 °C).
- If you require a product with a different frequency, power supply voltage, frequency control range, etc. to the standard specifications, please contact us with your enquiries.
  - Products without the AFC (Automatic Frequency Control) function are available. If you require such a product, please contact us.
- \*1. A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor (1,000 pF) to the line-out terminal of the oscillator.
  - \*2. This is a representative specification. The specifications may change according to the frequency that you request.

### Dimensions



### List of Ordering Codes

| Frequency (MHz) | Ordering Code             |
|-----------------|---------------------------|
| 16.368          | NT2016SA-16.368M-NSA3508A |
| 16.369          | NT2016SA-16.369M-NSA3508A |
| 19.2            | NT2016SA-19.2M-NSA3508A   |
| 26              | NT2016SA-26M-NSA3508B     |
| 27.456          | NT2016SA-27.456M-NSA3508B |
| 38.4            | NT2016SA-38.4M-NSA3508C   |
| 52              | NT2016SA-52M-NSA3508D     |

The above frequencies are NDK's standard frequencies. Frequencies other than the above are available. Feel free to contact our sales representatives.