

# Crystal Oscillator

## NT2016SA

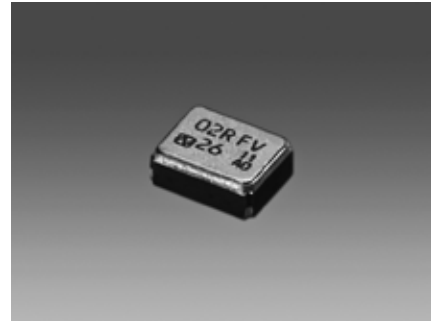
Temperature Compensated Crystal Oscillator(TCXO)  
for high-precision GPS

### ■ Main Application

Smartphone / Mobile phone, Wireless module, and GPS / GNSS module, etc.

### ■ Features

- A crystal oscillator with highly stable frequency / temperature characteristics best suited for GPS.
- Supports low power supply voltage.  
(Supports DC +1.7V to +3.3V. Standard specification : +1.8V)
- 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.
- 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.
- With an AFC (Automatic Frequency Control) function. (Option)
- Conforms to AEC-Q100/Q200.



Pb Free

RoHS Compliant  
Directive 2011/65/EU  
Directive (EU) 2015/863

### ■ Specifications

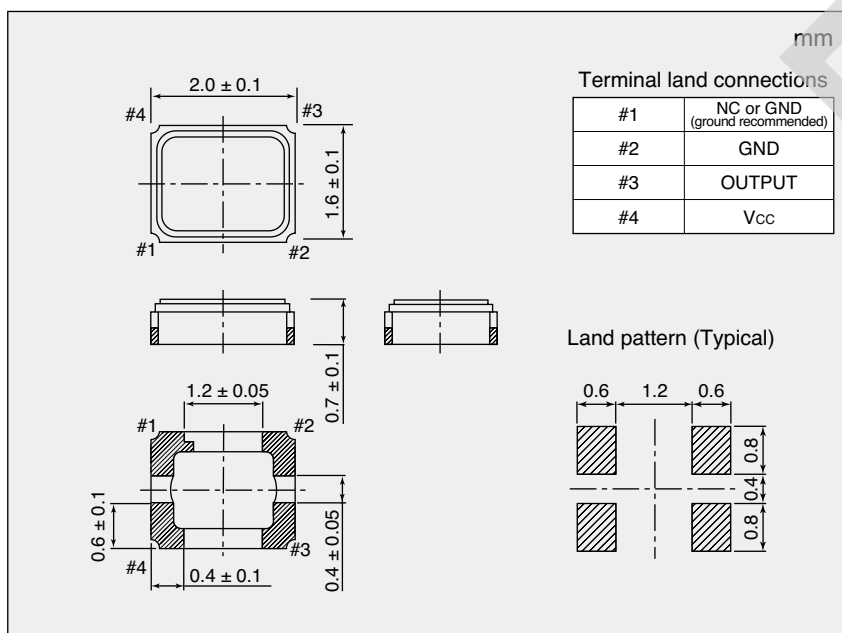
Item	Model	NT2016SA						
Nominal Frequency Range (MHz)		10 to 52						
Standard Frequency (MHz)		16.368	16.369	19.2	26	33.6	38.4	52
Supply Voltage [V <sub>cc</sub> ] (V)		+1.8						
Load Impedance		10 kΩ//10 pF						
Current Consumption (mA)		Max. 1.5				Max. 1.7		Max. 2.0
Output Voltage		Min. 0.8 V(p-p) (DC Coupling *1)						
Frequency/Temperature Characteristics		Max. $\pm 0.5 \times 10^{-6}$						
Operating Temperature Range (°C)		-30 to +85						
Storage Temperature Range (°C)		-40 to +85						
Frequency/Voltage Coefficient		Max. $\pm 0.2 \times 10^{-6} / +1.8 \text{ V} \pm 5 \%$						
Frequency/Load Coefficient		Max. $\pm 0.2 \times 10^{-6} / (10 \text{ k}\Omega / 10 \text{ pF}) \pm 10 \%$						
Long-term Frequency Stability		Max. $\pm 1.0 \times 10^{-6} / \text{year}$						
Specification Number		NSA3506A	NSA3506A	NSA3506A	NSA3506B	NSA3506B	NSA3506C	NSA3506D

\* Frequency setting conditions : Frequencies are set at normal temperatures (+25±2 °C).

Connect the #1 terminal of the oscillator to the ground that comes with the oscillator.

\*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.

### ■ Dimensions



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