

NT3225SA

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 and +2.8V)
- Compact and light with a height, cubic volume, and weight of Max. 1.0 mm, 0.007 cm³, and 0.024 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.
- Conforms to AEC-Q100/200.



Pb Free

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

■ Specifications

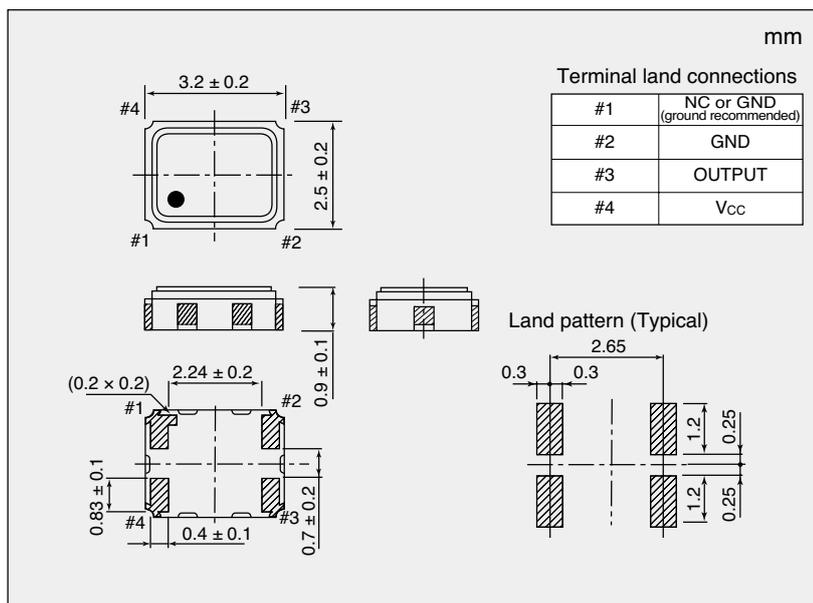
| Item | Model | NT3225SA | |
|---------------------------------------|-------|---|----------|
| Nominal Frequency Range (MHz) | | 10 to 40 | |
| Standard Frequency (MHz) | | 10, 13, 16.367667, 16.368, 16.369, 16.8, 19.2, 20, 23.104, 24.5535, 25, 26 | 38.4 |
| Supply Voltage [V _{cc}] (V) | | +1.8, +2.8 | |
| Load Impedance | | 10 kΩ//10 pF | |
| Current Consumption (mA) | | Max. 1.5 | Max. 1.7 |
| Output Voltage | | Min. 0.8 V(p-p) (DC Coupling *1) | |
| Frequency/Temperature Characteristics | | Max. ±0.5×10 ⁻⁶ | |
| Operating Temperature Range (°C) | | -30 to +85 | |
| Storage Temperature Range (°C) | | -40 to +85 | |
| Frequency/Voltage Coefficient | | Max. ±0.2×10 ⁻⁶ /V _{cc} ±5 % | |
| Frequency/Load Coefficient | | Max. ±0.2×10 ⁻⁶ /(10 kΩ//10 pF) ±10 % | |
| Long-term Frequency Stability | | Max. ±1.0×10 ⁻⁶ /year | |

* 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



■ Specification Number

| Frequency (MHz) | Supply Voltage | |
|-----------------|----------------|----------|
| | +1.8V | +2.8V |
| 10 | NSA3590A | NSA3591A |
| 13 | NSA3590A | NSA3591A |
| 16.367667 | NSA3590A | NSA3591A |
| 16.368 | NSA3590A | NSA3591A |
| 16.369 | NSA3590A | NSA3591A |
| 16.8 | NSA3590A | NSA3591A |
| 19.2 | NSA3590A | NSA3591A |
| 20 | NSA3590A | NSA3591A |
| 23.104 | NSA3590B | NSA3591B |
| 24.5535 | NSA3590B | NSA3591B |
| 25 | NSA3590B | NSA3591B |
| 26 | NSA3590B | NSA3591B |
| 38.4 | NSA3590C | NSA3591C |

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