

## Model Name NT3225SA

Temperature-Compensated Crystal Oscillator with AFC Function (VC-TCXO) NT3225S Series

### ■ Main Application

For mobile phones, etc.

### ■ Features

- Supports low power supply voltage. (Supports DC +2.4 V $\pm$ 0.1 V to +3.4 V $\pm$ 5 %.)
- Ultra-compact and light with a height, cubic volume, and weight of Max. 1.0 mm, 0.007 cm<sup>3</sup>, and 0.024g, 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 2002/95/EC

### ■ Specifications

| Item                             | Model | NT3225SA                                                                    |
|----------------------------------|-------|-----------------------------------------------------------------------------|
| Standard nominal frequency (MHz) |       | 10 to 26                                                                    |
| Supply voltage [VCC] (V)         |       | +3.0                                                                        |
| Load                             |       | 10 k $\Omega$ /10 pF                                                        |
| Current consumption (mA)         |       | Max. 1.5                                                                    |
| Output voltage                   |       | Min. 0.8 V(P-P) (DC Coupling *1)                                            |
| Frequency stability              |       | Max. $\pm 2.5 \times 10^{-6}$                                               |
| Operating temperature range (°C) |       | -30 to +75                                                                  |
| Supply variation                 |       | Max. $\pm 0.3 \times 10^{-6}$ / +3.0 V $\pm$ 5 %                            |
| Load variation                   |       | Max. $\pm 0.2 \times 10^{-6}$ / (10 k $\Omega$ /10 pF) $\pm 10$ %           |
| Aging                            |       | Max. $\pm 1.0 \times 10^{-6}$ / year                                        |
| AFC characteristic               |       | $\pm 9.0 \times 10^{-6}$ to $\pm 15.0 \times 10^{-6}$ / +1.5 V $\pm 1$ V *2 |

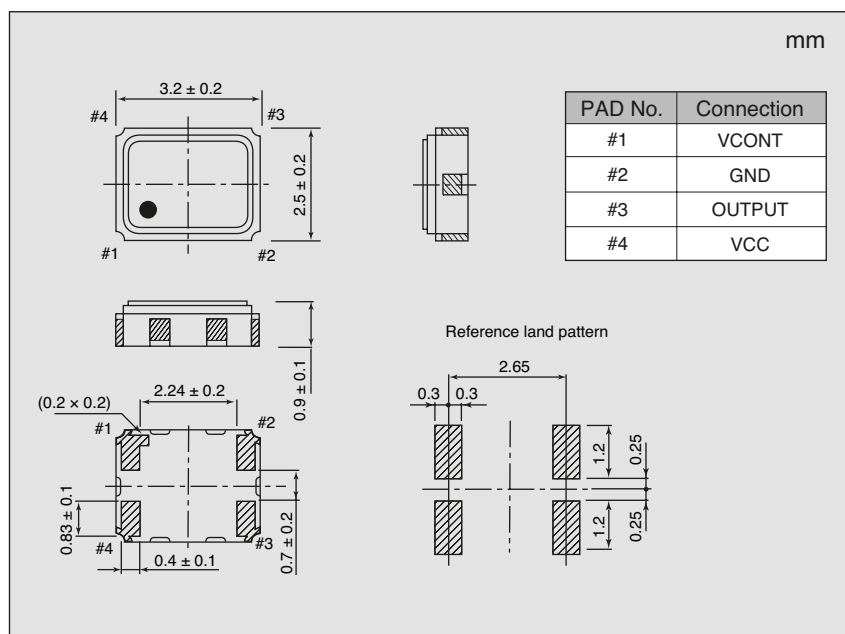
#### • Frequency setting conditions

1. Frequencies are set at normal temperatures (+25 $\pm$ 2 °C).
  2. Frequencies are set with a printed board that has a ground pattern attached to the underside of an oscillator.
- If you require a product with a different frequency, power supply voltage, frequency control characteristic, etc. to the standard specifications, please contact us with your enquiries.

\*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             |
|-----------------|---------------------------|
| 10              | NT3225SA-10M-NSA3391C     |
| 12.8            | NT3225SA-12.8M-NSA3391C   |
| 13              | NT3225SA-13M-NSA3391C     |
| 15.36           | NT3225SA-15.36M-NSA3391C  |
| 16.368          | NT3225SA-16.368M-NSA3391C |
| 19.2            | NT3225SA-19.2M-NSA3391A   |
| 19.68           | NT3225SA-19.68M-NSA3391A  |
| 19.8            | NT3225SA-19.8M-NSA3391A   |
| 21.25           | NT3225SA-21.25M-NSA3391A  |
| 26              | NT3225SA-26M-NSA3391A     |

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