

# Crystal Oscillator

## Model Name NT3225SA Temperature-Compensated Crystal Oscillator (TCXO) NT3225S Series

### Main Application

For mobile phones, etc.

### Features

- Supports low power supply voltage. (Supports DC +1.7 V to +3.3 V.)
- Compact and light with a height, cubic volume, and weight of Max. 1.0 mm, 0.007 cm<sup>3</sup>, 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.



Pb Free

RoHS Compliant  
Directive 2011/65/EU

### Specifications

Item	Model	NT3225SA
Nominal frequency range (MHz)		10 to 40
Standard frequency (MHz)		10, 12, 12.288, 12.8, 13, 14.4, 14.7456, 15, 15.36, 16, 16.368, 16.369, 16.384, 16.8, 18, 19.2, 19.44, 19.68, 20, 21.25, 22.4, 24, 24.576, 25, 26, 38.4, 40
Supply voltage [V <sub>CC</sub> ] (V)		+1.8, +3.0
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. ±2.5×10 <sup>-6</sup>
Operating temperature range (°C)		-30 to +75
Storage temperature range (°C)		-40 to +85
Frequency/Voltage coefficient		Max. ±0.3×10 <sup>-6</sup> /V <sub>CC</sub> ±5 %
Frequency/Load coefficient		Max. ±0.2×10 <sup>-6</sup> /(10 kΩ/10 pF) ±10 %
Long-term frequency stability		Max. ±1.0×10 <sup>-6</sup> /year

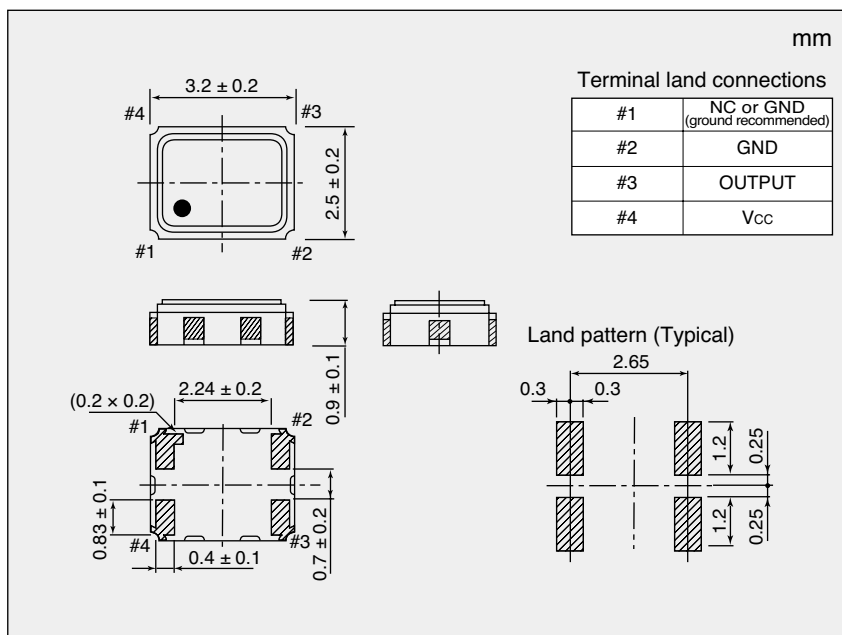
#### Frequency setting conditions

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.

\*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



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### ■ List of Ordering Codes

Ordering Code depends on the supply voltage.

Frequency (MHz)	Ordering Code	
	Supply voltage : +1.8V	Supply voltage : +3.0V
10	NT3225SA-10M-NSA0355D	NT3225SA-10M-NSA0355E
12	NT3225SA-12M-NSA0355D	NT3225SA-12M-NSA0355E
12.288	NT3225SA-12.288M-NSA0355D	NT3225SA-12.288M-NSA0355E
12.8	NT3225SA-12.8M-NSA0355D	NT3225SA-12.8M-NSA0355E
13	NT3225SA-13M-NSA0355D	NT3225SA-13M-NSA0355E
14.4	NT3225SA-14.4M-NSA0355D	NT3225SA-14.4M-NSA0355E
14.7456	NT3225SA-14.7456M-NSA0355D	NT3225SA-14.7456M-NSA0355E
15	NT3225SA-15M-NSA0355D	NT3225SA-15M-NSA0355E
15.36	NT3225SA-15.36M-NSA0355D	NT3225SA-15.36M-NSA0355E
16	NT3225SA-16M-NSA0355D	NT3225SA-16M-NSA0355E
16.368	NT3225SA-16.368M-NSA0355D	NT3225SA-16.368M-NSA0355E
16.369	NT3225SA-16.369M-NSA0355D	NT3225SA-16.369M-NSA0355E
16.384	NT3225SA-16.384M-NSA0355D	NT3225SA-16.384M-NSA0355E
16.8	NT3225SA-16.8M-NSA0355D	NT3225SA-16.8M-NSA0355E
18	NT3225SA-18M-NSA0355D	NT3225SA-18M-NSA0355E
19.2	NT3225SA-19.2M-NSA0355D	NT3225SA-19.2M-NSA0355E
19.44	NT3225SA-19.44M-NSA0355D	NT3225SA-19.44M-NSA0355E
19.68	NT3225SA-19.68M-NSA0356D	NT3225SA-19.68M-NSA0356E
20	NT3225SA-20M-NSA0356D	NT3225SA-20M-NSA0356E
21.25	NT3225SA-21.25M-NSA0356D	NT3225SA-21.25M-NSA0356E
22.4	NT3225SA-22.4M-NSA0356D	NT3225SA-22.4M-NSA0356E
24	NT3225SA-24M-NSA0356D	NT3225SA-24M-NSA0356E
24.576	NT3225SA-24.576M-NSA0356D	NT3225SA-24.576M-NSA0356E
25	NT3225SA-25M-NSA0356D	NT3225SA-25M-NSA0356E
26	NT3225SA-26M-NSA0356D	NT3225SA-26M-NSA0356E
38.4	NT3225SA-38.4M-NSA0357D	NT3225SA-38.4M-NSA0357E
40	NT3225SA-40M-NSA0357D	NT3225SA-40M-NSA0357E

The above frequencies are NDK's standard frequencies.

Frequencies other than the above are available. Feel free to contact our sales representatives.