

# Crystal Oscillator

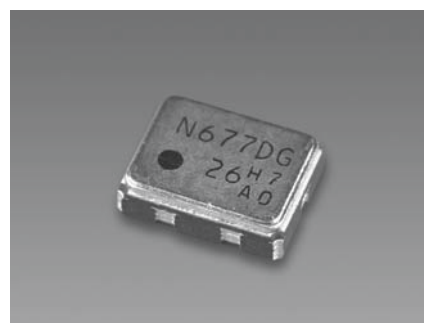
## Model Name NT3225SA Temperature-Compensated Crystal Oscillator with AFC Function (VC-TCXO) NT3225S Series

### ■ 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
Nominal frequency range (MHz)		10 to 26
Supply voltage [V <sub>CC</sub> ] (V)		+3.0
Load impedance		10 k $\Omega$ /10 pF
Current consumption (mA)		Max. 1.5
Output voltage		Min. 0.8 V(P-P) (DC Coupling *1)
Frequency/Temperature characteristics		Max. $\pm 2.5 \times 10^{-6}$
Operating temperature range (°C)		-30 to +75
Storage temperature range (°C)		-40 to +85
Frequency/Voltage coefficient		Max. $\pm 0.3 \times 10^{-6}$ /+3.0 V $\pm$ 5 %
Frequency/Load coefficient		Max. $\pm 0.2 \times 10^{-6}$ /(10 k $\Omega$ /10 pF) $\pm$ 10 %
Long-term frequency stability		Max. $\pm 1.0 \times 10^{-6}$ /year
Frequency control range		$\pm 9.0 \times 10^{-6}$ 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 range, etc. to the standard specifications, please contact us with your enquiries.

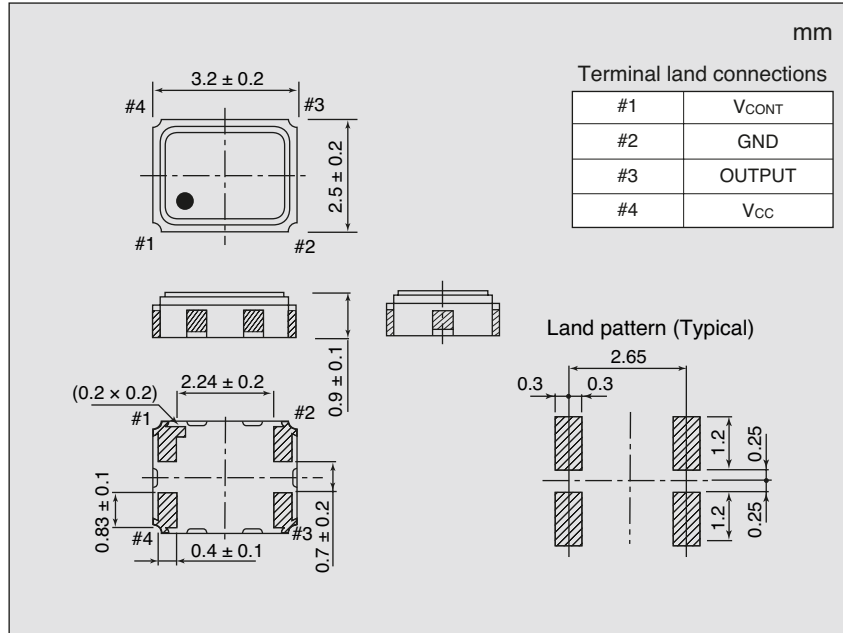
\*1. A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor (1,000 pF) to the line-out terminal of the oscillator.

\*2. This is a representative specification. The specifications may change according to the frequency that you request.

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### ■ Dimensions



### ■ List of Ordering Codes

Frequency (MHz)	Ordering Code
10	NT3225SA-10M-NSA3391E
11.0592	NT3225SA-11.0592M-NSA3391E
12	NT3225SA-12M-NSA3391E
12.288	NT3225SA-12.288M-NSA3391C
12.8	NT3225SA-12.8M-NSA3391E
13	NT3225SA-13M-NSA3391E
14.4	NT3225SA-14.4M-NSA3391C
14.7456	NT3225SA-14.7456M-NSA3391E
15	NT3225SA-15M-NSA3391E
15.36	NT3225SA-15.36M-NSA3391C
16	NT3225SA-16M-NSA3391C
16.368	NT3225SA-16.368M-NSA3391C
16.384	NT3225SA-16.384M-NSA3391C
16.8	NT3225SA-16.8M-NSA3391E
18	NT3225SA-18M-NSA3391E
19.2	NT3225SA-19.2M-NSA3391E
19.44	NT3225SA-19.44M-NSA3391E
19.68	NT3225SA-19.68M-NSA3391E
20	NT3225SA-20M-NSA3391E
21.25	NT3225SA-21.25M-NSA3391E
22.4	NT3225SA-22.4M-NSA3391E
24	NT3225SA-24M-NSA3391E
24.576	NT3225SA-24.576M-NSA3391A
25	NT3225SA-25M-NSA3391E
26	NT3225SA-26M-NSA3391E

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