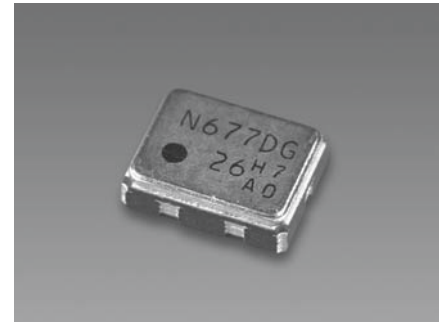# Crystal Oscillator

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±0.1 V to +3.4 V±5 %.)
- Ultra-compact and light with a height, cubic volume, and weight of Max. 1.0 mm, 0.007 cm³, 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 kΩ//10 pF
Current consumption (mA)	Max. 1.5
Output voltage	Min. 0.8 V(P-P) (DC Coupling *1)
Frequency stability	Max. ±2.5×10⁻⁶
Operating temperature range (°C)	−30 to +75
Supply variation	Max. ±0.3×10⁻⁶/+3.0 V±5 %
Load variation	Max. ±0.2×10⁻⁶/(10 kΩ//10 pF) ±10 %
Aging	Max. ±1.0×10⁻⁶/year
AFC characteristic	±9.0×10⁻⁶ to ±15.0×10⁻⁶/+1.5 V±1 V *2

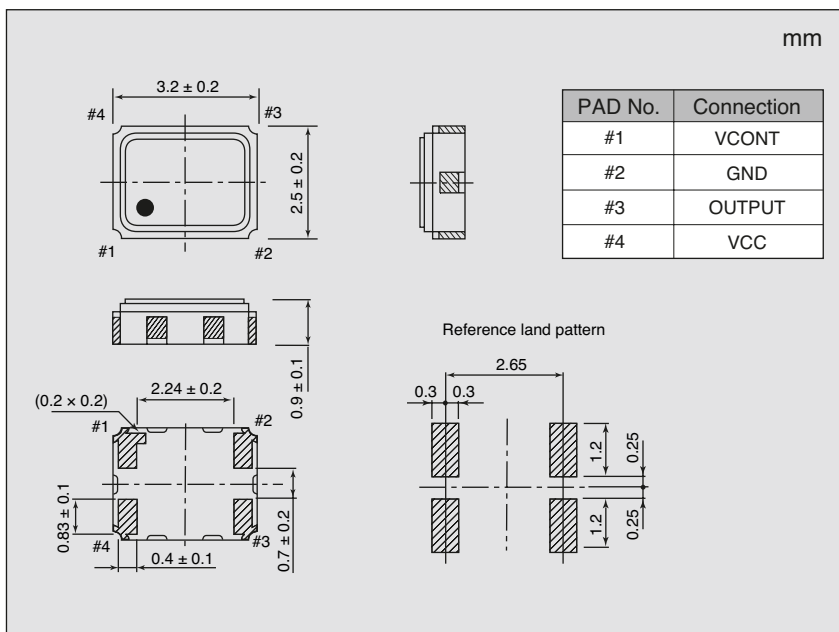- Frequency setting conditions
   1. Frequencies are set at normal temperatures (+25±2 °C).
   2. Frequencies are set with a printed board that has a ground pattern attached to the underside of an oscillator.
- If you require a product with a different frequency, power supply voltage, frequency control 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

mm

PAD No.	Connection
#1	VCONT
#2	GND
#3	OUTPUT
#4	VCC

Reference land pattern

■ 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.