

# Crystal Oscillator

## Model Name NH25M22WA

Oven-Controlled Crystal Oscillator (OCXO)  
for Fixed Communication Equipment

### Main Application

- Mobile communication base station
- Exchanger
- Measuring instrument
- Synthesizer
- High-end router

### Features

- Supports low power supply voltage.(3.3V)
- A surface-mount (SMD) package. Reflow soldering is possible.
- Excellent phase noise characteristics. (-125dBc/Hz at 1kHz)
- Excellent long-term frequency stability.(±50×10<sup>-9</sup>/year)

**RoHS Compliant**  
Directive 2002/95/EC



### Specifications

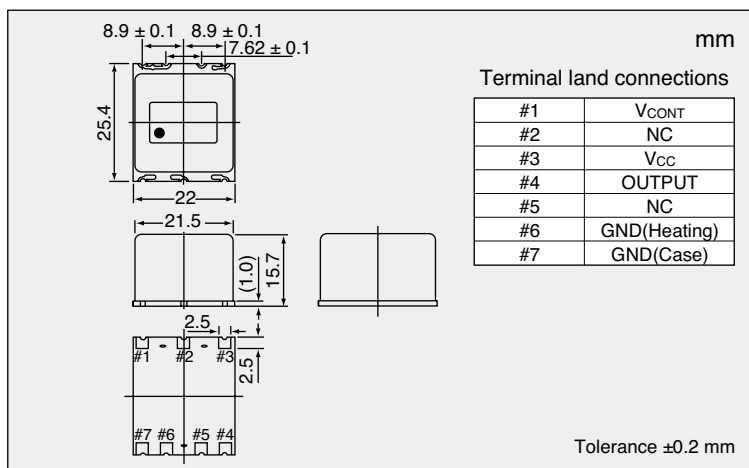
Item	Measurement condition	Model	NH25M22WA
Nominal frequency (MHz)			32.768
Supply voltage [V <sub>CC</sub> ] (V)			+3.3 ±5 %
Power consumption (W)	at start		Max. 3.0
	when stable (+25 °C)		Max. 1.3
Output voltage			HC MOS level (V <sub>OL</sub> Max. 0.4 V, V <sub>OH</sub> Min. 2.4 V)
Symmetry (%)	at 1/2 V <sub>CC</sub>		40 to 60
Load impedance (pF)			15
Operating temperature range (°C)			-10 to +70
Storage temperature range (°C)			-40 to +85
Stabilization time	Stabilization Time (Frequency Stability) within ±50 ×10 <sup>-9</sup> after power on at +25°C , based on frequency after 60minutes operation.		5 minutes
Long-term frequency stability	Based on frequency after 30 days operation		Max. ±2×10 <sup>-9</sup> /day
	Based on frequency after 30 days operation		Max. ±50×10 <sup>-9</sup> /year
Frequency/Temperature characteristics	-10 °C to +70 °C		Max. ±20×10 <sup>-9</sup>
Frequency/Voltage coefficient	V <sub>CC</sub> +3.3 V ±5 %		Max. ±3×10 <sup>-9</sup>
Frequency control range	+1.4 ±1.4 V		Min. ±0.9×10 <sup>-6</sup>
Frequency change polarity			Positive

### Reference Value

Phase noise (at 32.768 MHz)	Offset frequency	dBc/Hz
	1 Hz	Max. -65
	10 Hz	Max. -95
	100 Hz	Max. -115
	1 kHz	Max. -125
	10 kHz	Max. -140

The value of phase noise changes when the frequency changes.

### Dimensions



### List of Options

Power supply voltage [V <sub>CC</sub> ] (V)	+5
Nominal frequency range (MHz)	10 to 40

For details of options, please feel free to contact our sales representatives.

### List of Ordering Codes

Frequency (MHz)	Ordering Code
32.768	NH25M22WA-32.768M-NSA3425A

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