Crystal Oscillator

Model Name NH21M13LB Oven-Controlled Crystal Oscillator (OCXO) for Fixed Communication Equipment

■ Main Application

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

■ Features

- Compact, with a low height. (Compatible with 14-pin Dip)
- Excellent rise characteristics.
- Excellent phase noise characteristics.
- Excellent aging characteristics.
- Excellent short-term stability (can be used instead of a TCXO because of its higher precision).
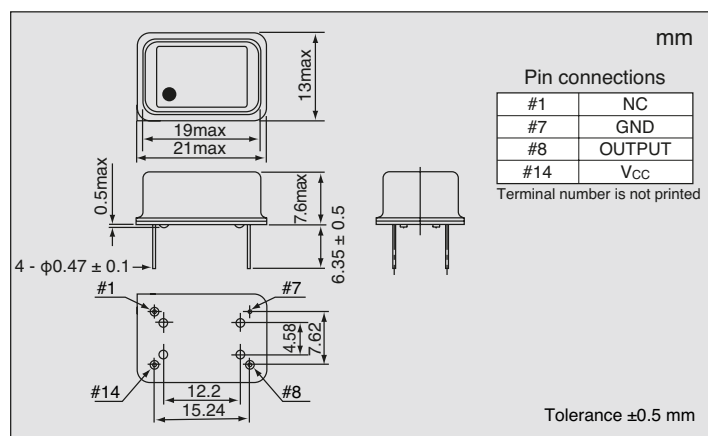
RoHS Compliant
Directive 2002/95/EC

■ Specifications

Item — Measurement condition		Model — NH21M13LB
Nominal frequency (MHz)		10, 12.8
Supply voltage [V_{CC}] (V)		+3.3 ±5 %
Power consumption (W)	at start	Max. 1.7
	when stable (+25 °C)	Max. 1
Output voltage		HCMOS level (V_{OL} Max. 0.4 V, V_{OH} Min. 2.4 V)
Symmetry (%)	at 1/2 V_{CC}	40 to 60
Load impedance (pF)		15
Operating temperature range (°C)		−10 to +70
Frequency tolerance / Stabilization time	Stabilization Time (Frequency Stability) within ±500 ×10^{-9} after power on at +25°C, based on frequency after 60minutes operation.	5 minutes
Frequency tolerance / Long-term frequency stability	Based on frequency after 30 days operation	Max. ±10×10^{-9}/day
	Based on frequency after 30 days operation	Max. ±500×10^{-9}/year
Frequency tolerance / Frequency/Temperature characteristics	−10 °C to +70 °C	Max. ±100×10^{-9}
Frequency tolerance / Frequency/Voltage coefficient	V_{CC} +3.3 V ±5 %	Max. ±50×10^{-9}

■ Reference Value

Phase noise (at 12.8 MHz)	Offset frequency	dBc/Hz
	1 Hz	Max. −60
	10 Hz	Max. −90
	100 Hz	Max. −120
	1 kHz	Max. −140
	10 kHz	Max. −145

The value of phase noise changes when the frequency changes.

■ Dimensions

mm

Pin connections

#1	NC
#7	GND
#8	OUTPUT
#14	V_{CC}

Terminal number is not printed

13max
19max
21max
0.5max
7.6max
6.35 ± 0.5
4 - φ0.47 ± 0.1
#1
#7
#14
#8
4.58
7.62
12.2
15.24

Tolerance ±0.5 mm

■ List of Options

Operating temperature range (°C)	−20 to +70
Power supply voltage [V_{CC}] (V)	+5
Nominal frequency range (MHz)	10 to 20

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

■ List of Ordering Codes

Frequency (MHz)	Ordering Code
10	NH21M13LB-10M-NSA3422A
12.8	NH21M13LB-12.8M-NSA3422A

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

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