

## Model Name NH21M13LB

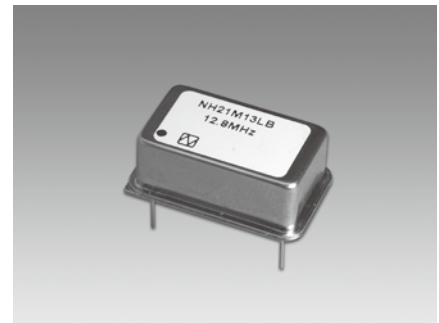
Oven-Controlled Crystal Oscillator (OCXO)  
for Fixed Communication Equipment

### Main Application

- Base stations for Mobile communication system
- Exchanger
- Measuring instrument
- Synthesizer
- High-end router

### Features

- Compact, with a low height. (Compatible with 14-pin Dip)
- Excellent short-term stability (can be used instead of a TCXO because of its higher precision).
- Excellent phase noise characteristics. (12.8MHz : -140dBc/Hz at 1kHz)
- Excellent long-term frequency stability.(±500×10<sup>-9</sup>/year)



Pb Free

RoHS Compliant  
Directive 2011/65/EU

### Specifications

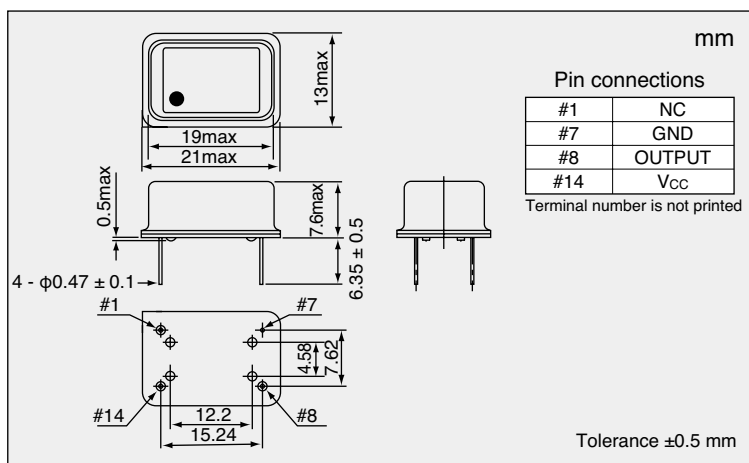
Item	Measurement condition	Model	NH21M13LB
Nominal frequency (MHz)			10, 12.8
Supply voltage [V <sub>CC</sub> ] (V)			+3.3 ±5 %
Power consumption (W)	at start		Max. 1.7
	when stable (+25 °C)		Max. 1
Output voltage			HCMOS level (V <sub>OL</sub> Max. 0.4 V, V <sub>OH</sub> Min. 2.4 V)
Symmetry (%)	at 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 ±500 ×10 <sup>-9</sup> after power on at +25 °C , based on frequency after 60minutes operation.		Max. 5 minutes
Long-term frequency stability	Based on frequency after 30 days operation		Max. ±10×10 <sup>-9</sup> /day
	Based on frequency after 30 days operation		Max. ±500×10 <sup>-9</sup> /year
Frequency/Temperature characteristics	-10 to +70 °C		Max. ±100×10 <sup>-9</sup>
Frequency/Voltage coefficient	V <sub>CC</sub> +3.3 V ±5 %		Max. ±50×10 <sup>-9</sup>

### Reference Value

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

The value of phase noise changes when the frequency changes.

### Dimensions



### List of Options

Operating temperature range (°C)	-20 to +70
Power supply voltage [V <sub>CC</sub> ] (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

Nominal 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.