

Crystal Oscillator

Model Name NH21M13LA

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

Main Application

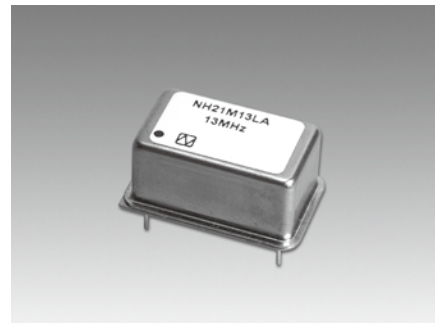
- Base stations for Mobile communication system
- Exchanger
- Measuring instrument
- Synthesizer
- High-end router

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. (10MHz : -140dBc/Hz at 1kHz)
- Excellent long-term frequency stability. ($\pm 500 \times 10^{-9}$ /year)

Pb Free

RoHS Compliant
Directive 2011/65/EU



Specifications

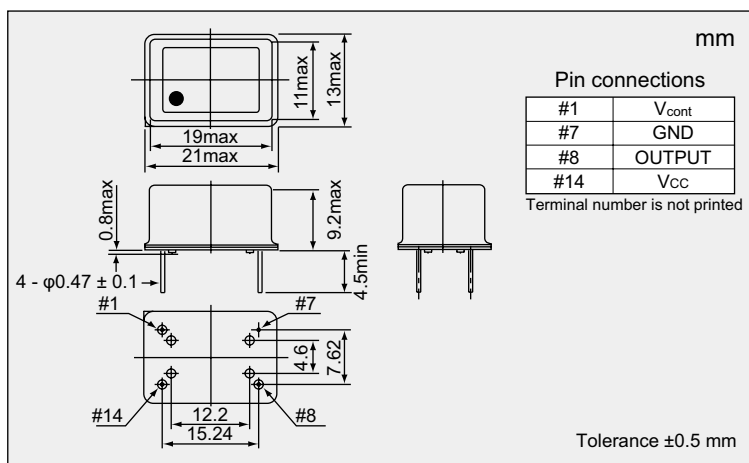
Item	Measurement condition	Model	NH21M13LA
Nominal frequency (MHz)			10, 13
Supply voltage [V _{CC}] (V)			+12 ±5 %
Power consumption (W)	at start		Max. 2
	when stable (+25 °C)		Max. 1.1
Output voltage			HCMOS level (V _{OL} Max. 0.5 V, V _{OH} Min. 4.5 V)
Symmetry (%)	at +2.5 V		40 to 60
Load impedance (pF)			15
Operating temperature range (°C)			0 to +70
Storage temperature range (°C)			-40 to +85
Stabilization time	Stabilization Time (Frequency Stability) within $\pm 500 \times 10^{-9}$ 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. $\pm 10 \times 10^{-9}$ /day
	Based on frequency after 30 days operation		Max. $\pm 500 \times 10^{-9}$ /year
Frequency/Temperature characteristics	0 to +70 °C		Max. $\pm 100 \times 10^{-9}$
Frequency/Voltage coefficient	V _{CC} +12 V ± 5 %		Max. $\pm 50 \times 10^{-9}$
Frequency control range	V _{cont} +4.5 ± 4.5 V		Min. $\pm 6 \times 10^{-6}$
Frequency change polarity			Positive

Reference Value

Phase noise (at 13 MHz)	Offset frequency	dBc/Hz
	1 Hz	-70
	10 Hz	-100
	100 Hz	-120
	1 kHz	-140
	10 kHz	-140

The value of phase noise changes when the frequency changes.

Dimensions



List of Options

Power supply voltage [V _{CC}] (V)	+3.3, +5.0
Nominal frequency range (MHz)	10 to 38.88

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

List of Ordering Codes

Nominal frequency (MHz)	Ordering Code
10	NH21M13LA-10M-NSA3416A
13	NH21M13LA-13M-NSA3416A

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