

# Crystal Oscillator

## Model Name NH20M20LA

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

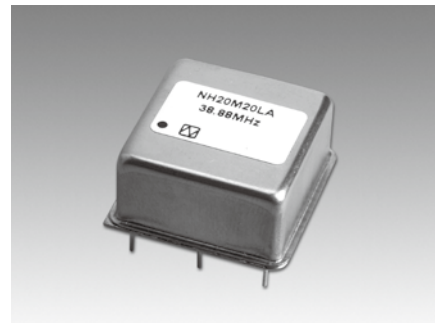
### Main Application

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

### Features

- Compact, with a low height.
- Excellent rise characteristics.
- Excellent phase noise characteristics.  
(38.88MHz : -135dBc/Hz at 1kHz)

RoHS Compliant  
Directive 2011/65/EU



### Specifications

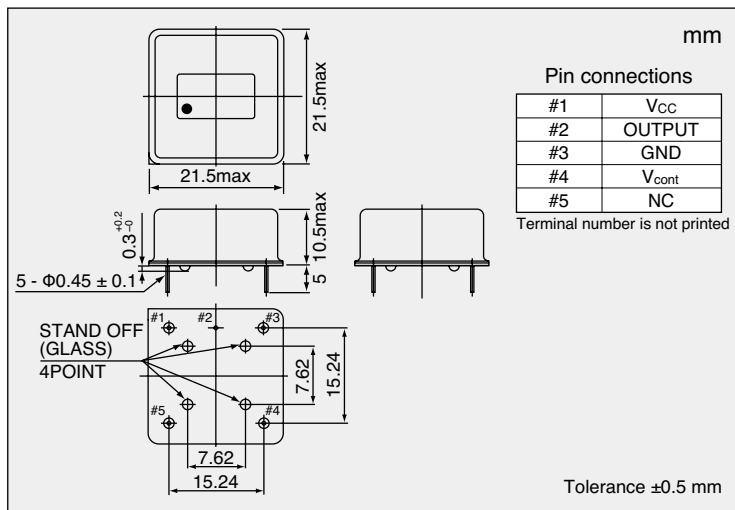
Item	Measurement condition	Model	NH20M20LA
Nominal frequency (MHz)			10, 38.88
Supply voltage [V <sub>CC</sub> ] (V)			+5 ±5 %
Power consumption (W)	at start		Max. 3
	when stable (+25 °C)		Max. 1.5
Output voltage			HCMOS level (V <sub>OL</sub> Max. 0.5 V, V <sub>OH</sub> Min. 4.5 V)
Symmetry (%)	at 1/2 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. 3 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. ±200 × 10 <sup>-9</sup>
Frequency/Voltage coefficient	V <sub>CC</sub> +5V ± 5 %		Max. ±50 × 10 <sup>-9</sup>
Frequency control range	V <sub>cont</sub> +2.5 ± 2.5 V		Min. ±5 × 10 <sup>-6</sup>
Frequency change polarity			Positive

### Reference Value

Phase noise (at 38.88 MHz)	Offset frequency	dBc/Hz
	1 Hz	-60
	10 Hz	-90
	100 Hz	-115
	1 kHz	-135
	10 kHz	-145

The value of phase noise changes when the frequency changes.

### Dimensions



### List of Options

Operating temperature range (°C)	-30 to +70
Power supply voltage [V <sub>CC</sub> ] (V)	+3.3
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	NH20M20LA-10M-NSA3421A
38.88	NH20M20LA-38.88M-NSA3421A

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