

## Model Name NH14M09TA

High Precision Oscillator (Twin-OCXO)  
for Fixed Communication Equipment

### Main Application

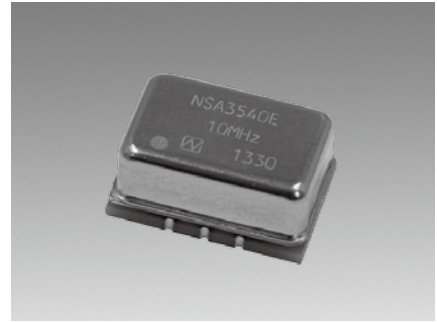
- Base stations for system mobile communications
- Optical transmission system
- Measuring instrument
- Synthesizer
- Exchanger
- High-end router

### Features

- Compact and excellent temperature characteristics.
- Excellent long-term frequency stability.
- Excellent phase noise characteristics.
- Hermetic sealing package for excellent environmental-proof performance.
- Supports wide temperature range (-40 to +85 °C)

Pb Free

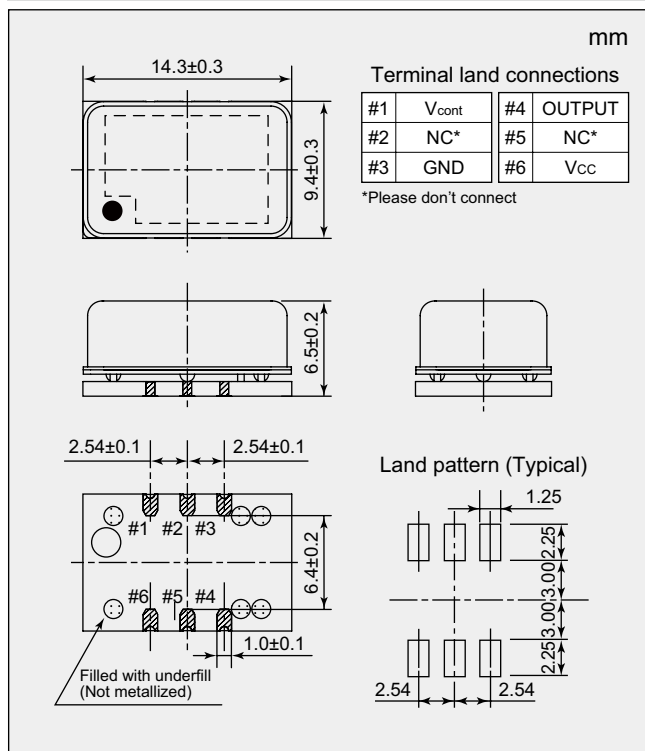
RoHS Compliant  
Directive 2011/65/EU



### Specifications

| Item                                  | Measurement condition   | Model  | NH14M09TA  |
|---------------------------------------|---|--|--|
| Nominal frequency range (MHz)         |   |  | 5 to 40  |
| Nominal frequency (MHz)               |   | 10, 12.8, 13, 16.384, 19.2, 20, 25, 26, 30.72, 38.4, 38.88, 40 |  |
| Supply voltage [V <sub>CC</sub> ] (V) |   |  | +3.3 ±5 %  |
| Power consumption (W)                 | at start  |  | Typ. 1.3 (Max. 2.0)  |
|                                       | when stable (+25 °C)  |  | Typ. 0.6 (Max. 1.0)  |
| Output voltage                        |   |  | LVC MOS (V <sub>OL</sub> Max. 0.3 V, V <sub>OH</sub> Min. 3 V) |
| Symmetry (%)                          | at 1/2 V <sub>CC</sub>  |  | 45 to 55   |
| Load impedance (pF)                   |   |  | 15   |
| Operating temperature range (°C)      |   |  | Refer to *1  |
| Storage temperature range (°C)        |   |  | -40 to +85   |
| Stabilization time                    | Stabilization Time (Frequency Stability) within ±100 ×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. ±5×10 <sup>-9</sup> /day                                  |
|                                       | Based on frequency after 30 days operation  |  | Max. ±500×10 <sup>-9</sup> /year                               |
| Frequency/Temperature characteristics |   |  | Refer to *1  |
| Frequency/Voltage coefficient         | V <sub>CC</sub> +3.3 V ±5 %   |  | Typ. ±5×10 <sup>-9</sup> (Max. ±10×10 <sup>-9</sup> )          |
| Frequency control range               | V <sub>cont</sub> +0.2 V to +2.8 V (@ +1.5V)  |  | Min. ±5.0×10 <sup>-6</sup>                                     |
| Frequency change polarity             | Frequency change polarity   |  | Positive   |
|                                       | Linearity   |  | Typ. 1%  |

### Dimensions



### Reference Value

|                         | Offset frequency | dBc/Hz |
|-------------------------|------------------|--------|
| Phase noise (at 10 MHz) | 1 Hz             | -75    |
|                         | 10 Hz            | -100   |
|                         | 100 Hz           | -125   |
|                         | 1 kHz            | -150   |
|                         | 10 kHz           | -160   |

The value of phase noise changes when the frequency changes.

### \*1 List of Options

|                                       |                           |
|---------------------------------------|---------------------------|
| Operating temperature range (°C)      | -20 to +70                |
| Frequency/temperature characteristics | Max. ±10×10 <sup>-9</sup> |
| Ordering Code                         | NH14M09TA-[ ]-NSA3540F    |
| Operating temperature range (°C)      | -40 to +85                |
| Frequency/temperature characteristics | Max. ±10×10 <sup>-9</sup> |
| Ordering Code                         | NH14M09TA-[ ]-NSA3540E    |

Please specify a NDK's nominal frequency in the square brackets.  
(Example 10MHz : Please specify 10M in the square brackets.)  
Frequencies other than the above are available.  
Feel free to contact our sales representatives.