# Crystal Oscillator

NDK Crystal Bridge to the Future

## NT14M09TA

**High Precision Oscillator (Twin-DCXO) for Fixed Communication Equipment**

### ■ Main Application

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

### ■ Features

- Compact, low current consumption and excellent frequency / temperaturecharacteristics.
- Excellent long-term frequency stability.
- Excellent phase noise characteristics.
- Supports wide temperature range.
- Hermetic sealing package for excellent environmental-proof performance.

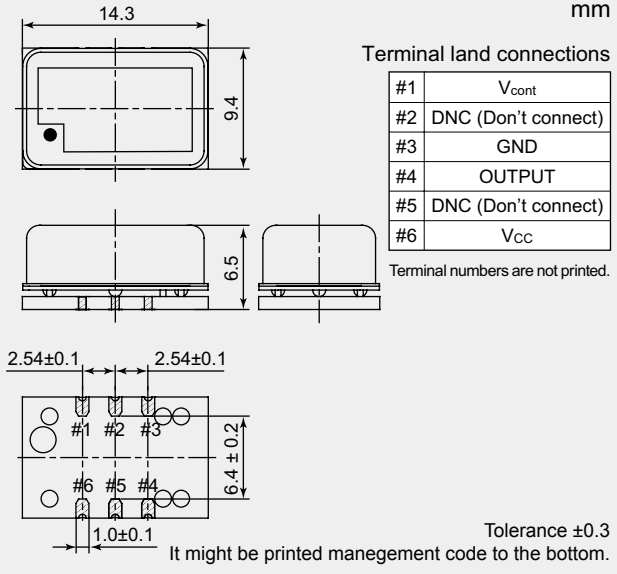
Pb Free

RoHS Compliant
Directive 2011/65/EU

### ■ Specifications

| Item \ Model | | NT14M09TA |
|---|---|---|
| Nominal Frequency Range $f_{nom}$ (MHz) | | 5 to 40 |
| Nominal Frequency $f_{nom}$ (MHz) | | 10, 12.8, 13, 19.2, 20, 25.6, 30.72, 38.88 |
| Supply Voltage Vcc (V) | | +3.3±5% |
| Load Impedance $C_L$ (pF) | | 15 |
| Operating Temperature Range $T_{opr}$ (°C) | | –40 to +85 |
| Storage Temperature Range $T_{str}$ (°C) | | –40 to +85 |
| Current Consumption $I_{CC}$ (mA) | | 35 |
| Frequency Tolerance $\Delta f/f_{nom}$ | at +25°C, $V_{cont}$ = Center, before shipment | Max. $\pm1.0\times10^{-6}$ |
| Overall Frequency Tolerance Δf/f | Includes<br>Frequency/Temperature Characteristics : at Operating Temperature Range<br>Frequency/voltage coefficient : $V_{CC}$± 5%<br>Frequency/load coefficient : CL± 10% | Max. $\pm100\times10^{-9}$ |
| Long-term Frequency Stability Δf/f | Based on frequency after 24 hours operation | Max. $\pm300\times10^{-9}$/year<br>(Typ. $\pm100\times10^{-9}$/year) |
| Frequency Control Range Δf/f | | $V_{Cont}$ = +1.65±1.65V |
| | | Max. $\pm5.0\times10^{-6}$ |
| Frequency Change Polarity | | Positive |
| Linearity (%) | | Max. ±5 (Typ. ±1) |
| Output Voltage | | LVCMOS<br>$V_{OL}$ : Max. +0.3 V<br>$V_{OH}$ : Min. +3.0 V |
| Symmetry (%) | at ($V_{OH}$ + $V_{OL}$) / 2 | 45 to 55 |
| Specification Number | | NSA3543A |

### ■ Dimensions




Terminal land connections

| | |
|---|---|
| #1 | $V_{cont}$ |
| #2 | DNC (Don't connect) |
| #3 | GND |
| #4 | OUTPUT |
| #5 | DNC (Don't connect) |
| #6 | $V_{CC}$ |

Terminal numbers are not printed.

### ■ Reference Value

| | Offset Frequency | dBc/Hz (typ.) |
|---|---|---|
| Phase Noise (at 10 MHz) | 1 Hz | –70 |
| | 10 Hz | –100 |
| | 100 Hz | –125 |
| | 1 kHz | –150 |
| | 10 kHz | –160 |

We offer dedicated tool for evaluation of this product

Please specify the model name, frequency, and specification number when you order products.
For further questions regarding specifications, please feel free to contact us.