# Crystal Oscillator NEW

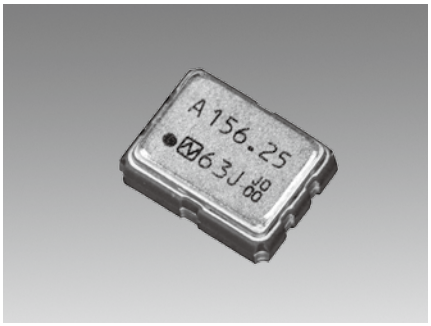
NDK Crystal Bridge to the Future

## NP3225SA

**Simple Packaged Crystal Oscillator (SPXO)**

### ■ Main Application

For communication equipment for ISDN, SDH/SONET, WiMAX, etc. and Base-stations




### ■ Features

- Ultra-compact with dimensions of 3.2 × 2.5 × 0.9 mm.
- Supply Voltage : +2.5V or +3.3V.
- LVPECL output level.
- Excellent low phase jitter.(Typ. 0.15ps @156.25MHz)

Pb Free

RoHS Compliant
Directive 2011/65/EU

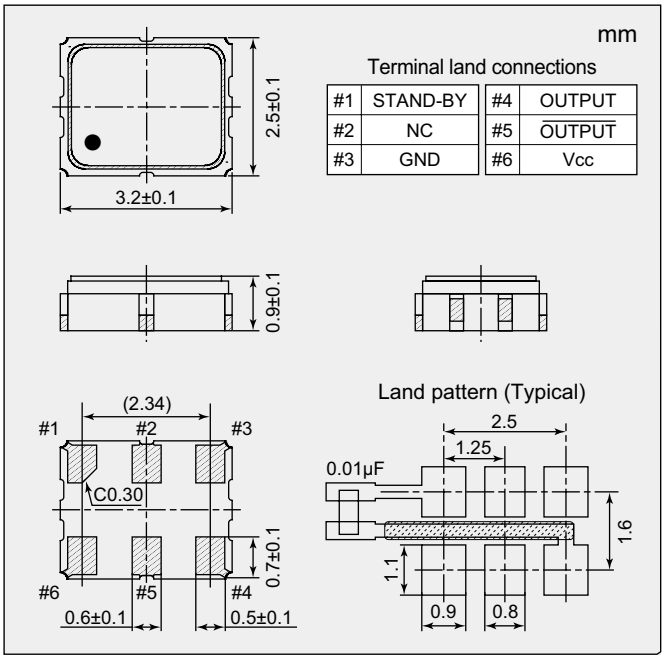
Absolute maximum rating
Supply Voltage ($V_{CC}$) –0.3 to +4.0 V
Storage Temperature Range –55 to +125 °C

### ■ Specifications

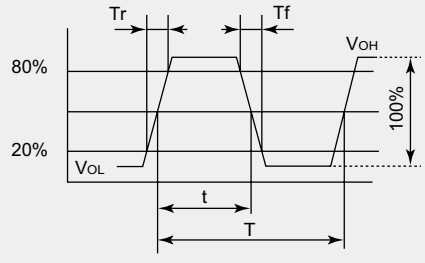
| Item \ Model | | NP3225SA | |
|---|---|---|---|
| Output Type | | LVPECL | |
| Nominal Frequency Range (MHz) | | 100 to 170 | |
| Overall Frequency Tolerance *1 | | Max. ±50 ×10$^{-6}$ | |
| Operating Temperature Range (°C) | | −40 to +85 | |
| Supply Voltage [$V_{CC}$] (V) | | +2.5 ± 5 % | +3.3 ± 10 % |
| Current Consumption | Enable (mA) | Max. 60 (STAND-BY=$V_{CC}$ or OPEN, $R_L$=50Ω) | |
| | Stand-by (μA) | Max. 15 (STAND-BY=GND) | |
| Output Voltage (V) | | $V_{OL}$ : $V_{CC}$ –1.81 to $V_{CC}$ –1.62 (DC characteristics) | |
| | | $V_{OH}$ : $V_{CC}$ –1.025 to $V_{CC}$ –0.88 (DC characteristics) | |
| Rise Time / Fall Time (ns) | | Max. 1 (20 to 80% Waveform) | |
| Symmetry (%) | | 45 to 55 (at 50% Waveform) | |
| Output Load (Ω) | | 50 (Terminated to $V_{CC}$–2.0V) | |
| Start-up Time (ms) | | Max. 10 | |
| Phase Jitter (ps) | | Max. 1 (Offset Frequency : 12kHz to 20MHz) | |
| Specification Number | | NSC5080A | NSC5080B |

*1 : The frequency stability includes initial frequency tolerance, temperature variation, and supply variation.

### ■ Dimensions




### ■ Output waveform




Symmetry = t/T × 100 [%]

### ■ Standby Function Table (Three-state)

| #1 Input | #4 and #5 output |
|---|---|
| Level H ($V_{IH}$ ≥ 0.7 $V_{CC}$) or OPEN | Oscillation output ON |
| Level L ($V_{IL}$ ≤ 0.3 $V_{CC}$) | High impedance |

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