NT3225SA

Temperature Compensated Crystal Oscillator(TCXO) for high-precision GPS

■ Main Application

Smartphone / Mobile phone, Wireless module, and GPS / GNSS module, etc.

■ Features

- A crystal oscillator with highly stable frequency / temperature characteristics best suited for GPS.
- Supports low power supply voltage. (Supports DC +1.7 V to +3.3 V.)
- Compact and light with a height, cubic volume, and weight of Max. 1.0 mm, 0.007 cm^3, and 0.024 g, respectively.
- Low power consumption.
- A surface-mount crystal oscillator. (Reflow soldering is possible.)
- Lead-free. Meets the requirements for re-flow profiling using lead-free solder.
- Conforms to AEC-Q100/200.

Pb Free

RoHS Compliant
Directive 2011/65/EU

■ Specifications

Item \ Model	NT3225SA	
Nominal Frequency Range (MHz)	10 to 40	
Standard Frequency (MHz)	10, 13, 16.367667, 16.368, 16.369, 16.8, 19.2, 20, 23.104, 24.5535, 25, 26	38.4
Supply Voltage [V$_{CC}$] (V)	+1.8, +2.8	
Load Impedance	10 kΩ//10 pF	
Current Consumption (mA)	Max. 1.5	Max. 1.7
Output Voltage	Min. 0.8 V(p-p) (DC Coupling *1)	
Frequency/Temperature Characteristics	Max. ±0.5×10^{-6}	
Operating Temperature Range (°C)	−30 to +85	
Storage Temperature Range (°C)	−40 to +85	
Frequency/Voltage Coefficient	Max. ±0.2×10^{-6}/V$_{CC}$±5 %	
Frequency/Load Coefficient	Max. ±0.2×10^{-6}/(10 kΩ//10 pF) ±10 %	
Long-term Frequency Stability	Max. ±1.0×10^{-6}/year	

- Frequency setting conditions : Frequencies are set at normal temperatures (+25±2 °C).
  Connect the #1 terminal of the oscillator to the ground that comes with the oscillator.
- *1. A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor (1,000 pF) to the line-out terminal of the oscillator.

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Terminal land connections

#1	NC or GND (ground recommended)
#2	GND
#3	OUTPUT
#4	V$_{CC}$

Land pattern (Typical)

■ Specification Number

Frequency (MHz)	Supply Voltage	
	+1.8V	+2.8V
10	NSA3590A	NSA3591A
13	NSA3590A	NSA3591A
16.367667	NSA3590A	NSA3591A
16.368	NSA3590A	NSA3591A
16.369	NSA3590A	NSA3591A
16.8	NSA3590A	NSA3591A
19.2	NSA3590A	NSA3591A
20	NSA3590A	NSA3591A
23.104	NSA3590B	NSA3591B
24.5535	NSA3590B	NSA3591B
25	NSA3590B	NSA3591B
26	NSA3590B	NSA3591B
38.4	NSA3590C	NSA3591C