# SiT9387A-B320001

500 MHz, ±100 ppm Total Stability MEMS XO for Boeing

PRELIMINARY

## Description

The SiT9387A-B320001 is a 3.3V LVDS XO with ±100 ppm total frequency stability over 20 year lifetime, in a 3.2x2.5 mm$^2$ QFN package.

Utilizing SiTime's unique DualMEMS™ temperature sensing and TurboCompensation™ technology, the SiT9387 delivers exceptional dynamic performance by providing resistance to airflow, thermal gradients, shock and vibration. This device also integrates multiple on-chip regulators to filter power supply noise, eliminating the need for a dedicated external LDO.

Refer to the SiT9387 datasheet, reliability report and composition report for all other device specifications, quality, and environmental information.

## Features

- Operating mode: XO
- Frequency: 500 MHz
- Total frequency stability over 20 years: ±100 ppm
- Operating temperature range: -40 to 105 °C
- Power supply voltage: 3.3V
- LVDS output
- No activity dips or micro jumps
- Exceptional dynamic stability under airflow and rapid temperature changes
- Integrated regulators for on-chip power-supply noise filtering and excellent PSNR
- Resistant to shock, vibration and board bending
- 3.2 x 2.5 mm$^2$ industry-standard QFN package

## Ordering Information

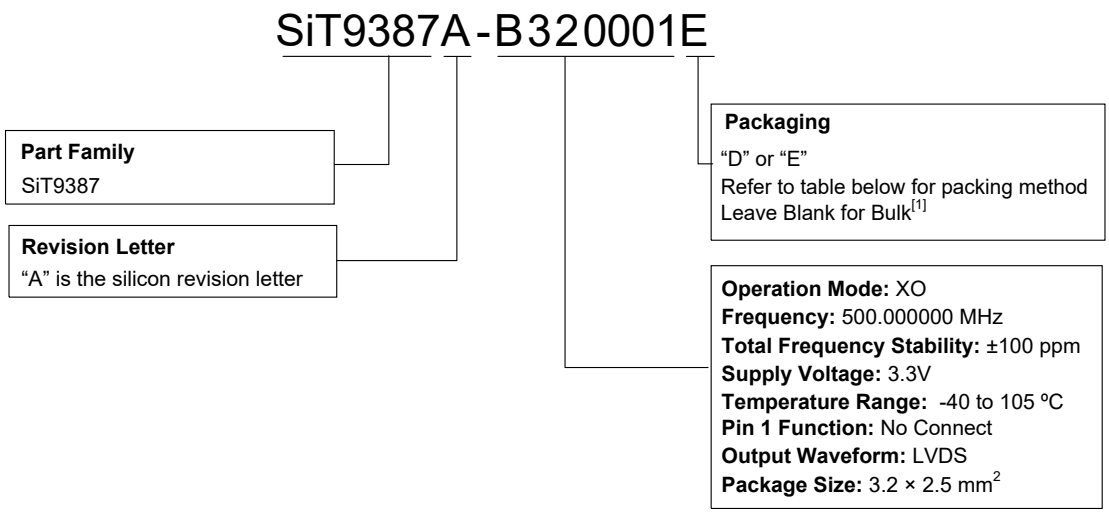


**Figure 1. Order codes**

**Notes:**
1. Bulk is available for sampling only.

**Table 1. Ordering Codes for Supported Tape & Reel Packing Method**

| Device Size (mm x mm) | 8 mm T&R (3ku) | 8 mm T&R (1ku) |
|---|---|---|
| 3.2 x 2.5 | D | E |

### Table 2. Electrical Characteristics[2]

| Parameters | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|---|---|---|---|---|---|
| **Frequency Coverage** | | | | | | |
| **Output Frequency Range** | F | | 500.000000 | | MHz | |
| **Frequency Stability** | | | | | | |
| **Frequency Stability** | F_stab | -50 | – | +50 | ppm | Inclusive of initial tolerance, operating temperature, rated power supply voltage and load variations |
| **Total Frequency Stability** | F_stab_total | -100 | – | +100 | ppm | Inclusive of Initial tolerance, and variations over rated power supply voltage and load (15 pF ± 10%), at 85 °C ambient temperature for 20 years |
| **Supply Voltage** | | | | | | |
| **Supply Voltage** | $V_{DD}$ | 2.97 | 3.3 | 3.63 | V | |
| **Temperature Range** | | | | | | |
| **Operating Temperature Range** | T_use | -40 | – | 105 | °C | Ambient temperature |

**Note:**
2. Refer to SiT9387 standard datasheet for all other specifications.

## Revision History

### Table 3. Revision History

| Version | Release Date | Change Summary |
|---|---|---|
| 0.80 | 12/27/2019 | Preliminary release |
| 0.81 | 01/11/2020 | Revised part number |

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