MEMS 3 axis accelerometer

A small surface mounted MEMS sensor offering best-in-class characteristics for inclination measurements including user selectable measurement range, and features better than 10 mg offset stability

Features

- 3 axis high performance accelerometer with ±1.5 to ±6g user selectable measurement range
- Extensive self-diagnostics features
- Excellent bias stability and low noise level
- Mechanically damped sensing element design for superior vibration robustness
- SPI digital interface
- -40°C...+125°C operating range
- 3.0V...3.6V supply voltage with 1mA current consumption
- Proven capacitive 3D-MEMS technology
- Product platform qualified according to AEC-Q100 standard

Size

7.6 x 3.3 x 8.6 mm

Applications

SCA3300 is targeted at applications demanding high stability with tough environmental requirements.

Typical applications include:

- Professional Leveling
- Angle measurement and control
- Tilt compensation
- Inertial Measurement Units (IMUs) for heavy machine and automotive (ADAS)
- Motion Analysis and Control
- Navigation Systems
- Intelligent Transmission Control

Figure 1. Vibration rectificiation error

An example of superior vibration robustness: DC Offset error during vibration. Sine sweep 500...5KHz 4g amplitude and 5kHz...25kHz 2g amplitude.

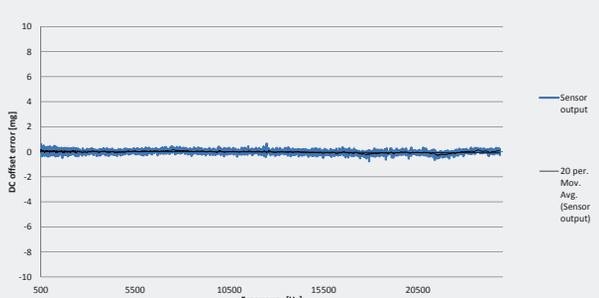
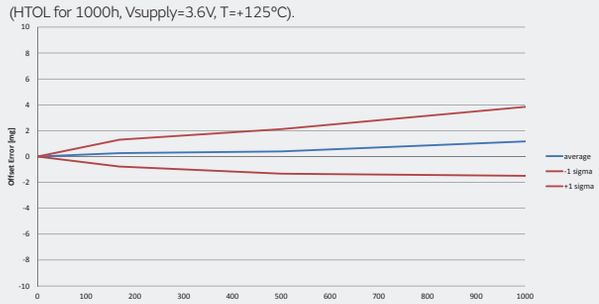


Figure 2. Long term stability

An example of Ground breaking stability: Typical offset long term stability for X, Y, Z axis (HTOL for 1000h, Vsupply=3.6V, T=+125°C).



Typical performance overview

Parameter	SCA3300-D01
Operating Range	-40...+125 °C
Measurement range options	±6g/88Hz
	±3g/88Hz
	±1.5 g/88Hz
	±1.5 g/10Hz
Offset Temperature Error	±15 mg /±0.86 °
Sensitivity Temperature Error	±0.5%
Linearity ±1g range	±0.6mg
Linearity ±6g range	±15mg
Noise Density	37 ug/sqrt(Hz)

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