Inertial sensor I **SMI980**

Highest robustness

enables HAD/ADAS and Active/Passive Safety

Function

The SMI980 is an advanced 6-in-1 inertial sensor featuring an open-cavity LGA package, designed for both active and passive safety applications as well as Highly Automated Driving (HAD)/ADAS systems. With a focus on low noise and exceptional vibration robustness, the SMI980 is ideal for demanding environments, including motorcycle applications.

Application

ADAS / Highly Automated Driving (HAD)
Provides reliable data for advanced driving assistance systems.

Active and Passive Safety Systems
Enhances vehicle control and occupant protection during critical events.

Key Features

Low Noise Performance: Delivers precise and clear data essential for safety and HAD/ADAS systems.

Customizable Features: Allows customers to configure specific features to meet their unique requirements, enhancing versatility.

Open-Cavity LGA Package: Facilitates easy integration and enhances durability.

Pin compatible with SMU300

Superior Vibration Robustness: Ensures reliable operation in extreme conditions, surpassing industry standards. Additional damper guarantees extra Gyro vibration robustness.

Safety

The SMI980 is developed according to ASIL D process (ISO26262:2018)

Safe and precise

integrated sensor solution for systems up to ASIL D



Technical features

Package	24 pin open-cavity LGA, 8 x 8 mm	
Supply voltage	3.3 | 5 V	
Supply current	< 30 mA	
Operating temperature	-40 to +125 °C	
Interface	SPI (in-frame | out-of-frame)	
Data resolution	16 | 20 bit	
	Gyro	**Accel**
Sensing axes	X, Y, Z	X, Y, Z
Range	± 300 °/s	Low-g: ± 6 | 8 g
		Mid-g: ± 35 | 25 g
Sensitivity[2]	100 LSB per °/s	5000 LSB per g

Performance over temperature

Accelerometer	**Typ.**	**unit**
Offset[1]	6.25	mg
Sensitivity err (x, y, z)	0.25	%
Non-linearity	1.25	mg
Velocity random walk	100	µg/√Hz
Bias stability	25	µg

Gyroscope	**Typ.**	**unit**
Offset[1]	0.25	°/s
Sensitivity err (x, y, z)	0.25	%
Non-linearity	0.0125	°/s
Angular random walk	0.1	°/√h
Bias stability	1.5	°/h

1) Zeroed on PCB 2) For 300°/s range, 6g range respectively, and 16bit configuration
For the lifetime specification and additional parameters please see the corresponding TCD.

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