

Inertial sensor | SMI340

Robust operation

enables ESP, rollover and ADAS

Function



The SMI340 is a state-of-the-art 6-in-1 inertial sensor designed for Electronic Stability Program (ESP), airbag, rollover and ADAS applications. Engineered to deliver exceptional performance, the SMI340 stands out with excellent vibration robustness and superior technical specifications.

Application



Electronic Stability Program (ESP)

Helps maintain vehicle control during sudden maneuvers.

Airbag and rollover detection

Activates safety mechanisms to protect occupants in rollover scenarios.

ADAS/Highly Automated Driving (HAD)

Provides reliable data for advanced driving assistance systems.

Key Features



High Vibration Robustness: Ensures reliable operation even in the most demanding environments.

Precision Measurement: Provides accurate data crucial for ESP, airbag systems and ADAS.

Compact Design: Easy integration into existing systems without compromising performance.

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

Safety



The SMI340 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 LGA, 4.4 x 3.1 mm	
Supply voltage	2.8 – 3.6 V	
Supply current	< 5 mA	
Operating temperature	-40 to +125 °C	
Interface	SPI (in-frame out-of-frame) & I2C	
Data resolution	16 bit	
	Gyro	Accel
Sensing axes	X, Y, Z	X, Y, Z
Range	± 300 °/s	Low-g: ± 4,8,16,32g Mid-g: ± 35 g
Sensitivity ¹	100 LSB per °/s	8000 LSB per g

Performance over temperature

Accelerometer	Typ.	unit
Offset	8.75	mg
Sensitivity err (x, y, z)	0.5	%
Non-linearity ¹	2.5	mg
Velocity random walk	300	µg/√Hz
Bias stability	50	µg
Gyroscope	Typ.	unit
Offset	0.5	°/s
Sensitivity err (x, y, z)	0.5	%
Non-linearity	0.125	°/s
Angular random walk	0.18	°/√h
Bias stability	3	°/h

¹ For 4g range

For the lifetime specification and additional parameters please see the corresponding TCD.