

Acceleration Sensor | SMA73x

Low-G Accelerometer

enabling active chassis control

Function



The SMA73x family of low-g accelerometers is designed for use in active suspension systems to measure chassis acceleration. The acceleration signals are transmitted via the peripheral digital interface PSI5. Capable of measuring acceleration up to ± 16 g in the x and y axes, the sensors are available in both single-channel and dual-channel configurations.

Application



Active Suspension: Vehicle dynamics in active suspension systems are monitored by strategically placed accelerometers. The fusion of sensor signals from roll motions and pitch rotations enables the calculation of the chassis' vertical movement. A close-to-chassis installation ensures measurement accuracy for all static and dynamic accelerations.

Key Features



High EMC Robustness: The PSI5 interface ensures a high EMC robustness through a combination of high signal currents, low system impedance, and high-speed data transmission, enabling reliable performance even over long distances.

Self-Diagnostic Features: The SMA73x incorporates extensive self-diagnostic features, supported by a detailed monitoring concept and robust error management, to guarantee continuous operational integrity.

Configuration Possibilities: To maximize versatility, customers can configure the sensors to meet specific application requirements. This adaptability allows a single hardware platform to cover a broad range of use cases.

Safety



The SMA73x is developed according to ISO26262 for systems with safety targets up to ASIL B. This development process ensures its suitability for demanding safety environments and guarantees maximum operational reliability.

Highly Integrable

with a small footprint and high-volume proven



Technical Features

Package	SOIC8, 4.9 x 6 mm
Communication Interface	PSI5
Supply voltage	4.5 – 11 V
Supply current	4 – 6 mA
Operating temperature	-40 to +125 °C
Data resolution	14 bit
Accel	
Sensing axes	X (SMA731) Y (SMA732) XY (SMA735)
Range	16 g (SMA731/2) 15.36 g (SMA735)

Performance over Temperature

Accelerometer	typ	unit
Sensitivity	480 (SMA731/2) 500 (SMA735)	LSB/g
Sensitivity error	0.9	%
Non-linearity	0.5	%FS
Offset without cancellation	32.5	mg
Offset with cancellation	1	mg
Band width selectable	53, 215, 430, 860	Hz