

Sensors

Chassis Acceleration Sensor BSZ04

General Description

This sensor is a single axis acceleration sensor with analog output developed for chassis control applications. It represents the second generation of a successful family of chassis acceleration sensors, which was introduced over ten years ago and of which so far more than six million sensors are in the field.

At the core of this sensor is the micro-mechanical sensor element, a robust capacitive acceleration sensor with an excellent static and dynamic performance. The sensor element is completed by two ASICs which provide the necessary signal conditioning and protection circuitry.

Application

The sensor is primarily used for the sensing of the vertical acceleration for chassis control with measurement range of ± 15.0 g permit to sense the acceleration of the axles and wheels.

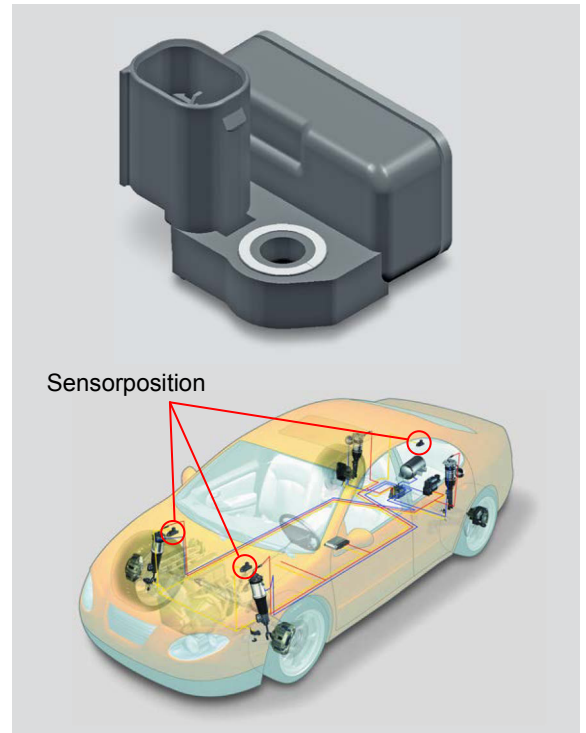
Other applications include start/stop and hill start assist (inclination measurement), engine vibration management and the control of power gates.

Key Features:

- Measurement range ± 15.0 g
- Measurement directions in z-axis
- High sensitivity 0.13 V/g
- Overload protection (1000 g, 1 ms)
- Overvoltage protection up to 16 V
- Reverse polarity protection up to 14.5 V
- Temperature range -40°C up to $+125^{\circ}\text{C}$
- Qualified for automotive systems

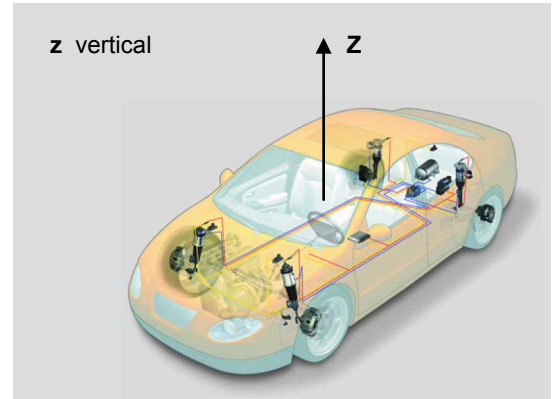
Applications:

- Vertical body acceleration
- Inclination measurement (start / stop and hill start)
- Engine vibration management



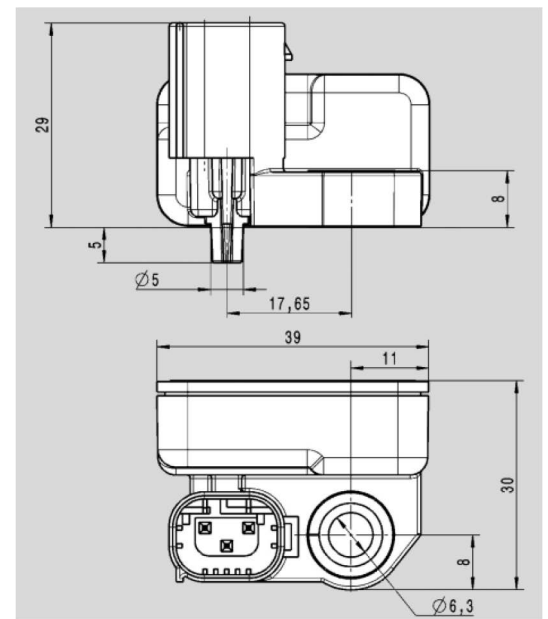
Electrical Characteristics

Parameter	Min.	Typ.	Max.
Supply voltage	4.75 V	5 V	5.25 V
Supply current			10 mA
Zero acceleration output voltage		2.5 V (ratiometric)	
Operating temperature	-40°C		+125 °C
Overvoltage			16 V
Reverse polarity			14.5 V



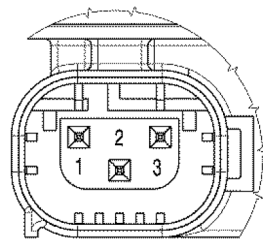
Performance Characteristics

Sensor type	630 / 15.0
Measurement range	-15.0 g ... +15.0 g
Measurement direction	z-axis
Sensitivity	0.13 V/g
Output voltage range (nominal)	Lower limit: 0.05 Vsup Upper limit: 0.95 Vsup



Mechanical Characteristics

Case material	PBT + 30 % GF
Weight	max. 30 g
Protection class	IP6K9K (with mating connector mounted)
Mounting method	Fixed with screw
Connector type	3 pin TYCO MQS Terminals SN or AU plated, □ 0.63 mm
Height	29.0 mm / 34.0 mm with connector
Length	39.0 mm
Width	30.0 mm



Pin no.	Signal name
1	Output
2	GND
3	Supply

Directive 2000/53/EC

The BSZ04 sensor complies with the requirements of the Directive 2000/53/EC regarding the use of lead and other hazardous substances in electrical components and modules for automotive applications.

Mounting Position

The BSZ04 sensor fulfills the requirements, which follow from a mounting in the wheel house, e. g. high temperature, mechanical vibration, ice water.