



Versatile semiconductors: Bosch launches new automotive system-ICs at electronica 2018

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- ▶ ICs with embedded "intelligence" manage important in-car processes.
- ▶ New system IC reliably separates the high voltage battery from the vehicle network in the event of an accident.
- ▶ Application-specific integrated circuits (ASICs) from Bosch have been used in vehicles since 1970

Munich and Reutlingen, Germany – System ICs are application-specific integrated circuits (ASICs) designed to meet special requirements in vehicle systems. They are integrated on a single silicon chip measuring only a few square millimeters, and house complex circuits with up to several million individual electronic functions. At electronica 2018, the world's leading trade show for electronics, Bosch introduces four new system-ICs.

A new chip for electric vehicles will shut off the power in the event of an accident, ensuring safety for driver and passengers and enable rescuers to work without being put in danger.

Semiconductors make electric cars safer in an accident

Pure electric or hybrid vehicles are equipped with special batteries that provide power to the electric motor at high voltages of 400 to 800 volts. For safety reasons, these high-voltage batteries, power electronics and their electrical wiring are designed to be highly robust. Nevertheless, the question of how secure a high-voltage battery is in the event of an accident is of vital concern to both the vehicle's occupants as well as any rescue workers. To prevent these persons from coming into contact with high voltage, while at the same time eliminating the risk of a vehicle fire, it must be possible to completely isolate the battery from the vehicle's electrical system.

During an accident, so-called "pyro fuses" blow out sections of the electrical wiring to the high-voltage battery by means of a small explosive charge, so that the circuit is interrupted quickly and effectively. Here, Bosch semiconductors play a crucial role: The integrated circuit CG912 can, as a part of the battery

management, fire up to four pyro fuses in the battery wiring in the event of an accident,. This mitigates the risk of electrical shock when touching the vehicle's chassis. In addition, this special IC can also provide power to the battery management. Bosch's CG912 was originally developed for deploying airbags and has been proven in the field a million times over.

New system ICs at electronica 2018

System ICs are truly versatile. They provide stable supply voltages, read sensor data, process information and drive actuators – in real time. The new oxygen sensor evaluation IC CJ138 offers, in comparison to its predecessors, extended options for adapting an engine control unit to a wide range of oxygen sensors, as well as accurate sensor cable diagnostic for short circuit or interruption. The highly integrated transmission IC CG270 precisely controls up to ten hydraulic valves in automatic transmissions and allows the design of more compact control units for modern multi-stage transmissions. CG135 is a transmission IC that monitors the supply voltages in a transmission control unit and prevents the transmission from being damaged in the event of a fault.

Press photo: #1653312, #1688030

Further information:

www.bosch-semiconductors.com

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BOSCH AT ELECTRONICA 2018 IN MUNICH

- **BOOTH: Tuesday to Friday, November 13–16, 2018**, booth 522 in hall C3
- **FOLLOW** the Bosch electronica 2018 highlights on Twitter: **#BoschMEMS**
- **PANELS WITH BOSCH EXPERTS:**
 - **Monday, November 12, 12:30 p.m.:** presentation “Sensors enabling future mobility solutions” by Dr. Markus Sonnemann, Vice President Pre-Development MEMS sensors at Robert Bosch GmbH, electronica Automotive Conference at ICM Munich
 - **Tuesday, November 13, 11:30 a.m.:** presentation “MEMS – one product one process?” by Dr. Udo-Martin Gómez, Senior Vice President MEMS sensors, Robert Bosch GmbH, SEMICON Europe, Fab Management Forum at ICM Munich in room 14c

- **Tuesday, November 13, 3:00 p.m.:** Automobilwoche panel discussion “electronica Talk from the Top” with Jens Fabrowsky, Executive Vice President Automotive Electronics at Robert Bosch GmbH, discovery stage in hall C6
- **Tuesday, November 13, 3:30 p.m.:** presentation “MEMS Mobility Sensors for motion detection” by Michael Rupp, Senior Expert Product Management Sensors at Robert Bosch GmbH, electronica Automotive Forum in hall B4
- **Wednesday, November 14, 3:10 p.m.:** presentation “The future of MEMS-based smart sensor nodes in the context of highly functional and ultra-low power IoT applications” by Dr. Ralf Schellin, Head of Product Area MEMS at Bosch Sensortec GmbH, International Congress Center (ICC)

Mobility Solutions is the largest Bosch Group business sector. According to preliminary figures, its 2017 sales came to 47.4 billion euros, or 61 percent of total group sales. This makes the Bosch Group one of the leading automotive suppliers. The Mobility Solutions business sector pursues a vision of mobility that is accident-free, emissions-free, and stress-free, and combines the group's expertise in the domains of automation, electrification, and connectivity. For its customers, the outcome is integrated mobility solutions. The business sector's main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,000 associates worldwide (as of December 31, 2017). The company generated sales of 78.1 billion euros in 2017. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is “Invented for life.” The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 125 locations across the globe, Bosch employs some 64,500 associates in research and development.

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