

Hall Sensors

Extended Hall Switch series simplifies your way to an ISO 26262 compliant system solution

The first ISO 26262 compliant HAL 15xy Hall Switch series provides superior power consumption, robustness and safety performance and is now available in TO92-UA leaded package.

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TDK Corporation presents the extension of the Micronas HAL 15xy Hall-Effect Switch series by derivatives now available in TO92-UA leaded package.

Today, new safety criteria challenge even the smallest components in automotive applications regarding functional and process monitoring. In order to fulfil such enhanced functional safety requirements, Micronas has developed HAL 15xy derivatives based on a process compliant to ISO 26262. With a single-point fault metric greater than 60%, HAL 15xy provides more diagnostic features than standard switches. In addition, HAL 15xy includes an optimal on-chip self-test to check the signal path at power-on and to identify wire breaks.

"Thanks to its advanced functional safety performance and to the ISO 26262 compliant development process, modules equipped with HAL 15xy can fulfil more easily higher safety criteria in automotive applications, says Carolin Kaiser", Product Marketing Manager at Micronas.

Beside its functional safety focus, the sensor was designed for fault-free operation in most demanding environments. Therefore, HAL 15xy provides a wide supply voltage range down to 2.7 V for reliable measurements during voltage drops and an extended robustness against voltage peaks as load dump pulses up to 40 V under ambient temperature conditions from -40 °C up to 150 °C. The AEC-Q100 qualified HAL 15xy is available with open-drain and current output.

In addition to the small SOT23 SMD package with footprint and body design according to the JEDEC standard, Micronas has now also launched HAL 15xy in the same proven TO92-UA leaded package of the HAL 5xy switch series with two billion sensors sold.

Apart from this, Micronas' TO92 packages are now benefitting from a new fully automatic integrated processing system making mechanical lead bending redundant and providing preformed spread leads with higher quality. This allows a new extended lead length of up to 20 mm to target a wider application range by easier assembly and by cost savings in our customers' production flow.

Micronas will present HAL 15xy derivatives from November 8 to 11 at the Electronica exhibition in Munich (hall A6, booth 219).

Glossary

- **Hall Effect:** Hall sensors are based on the so-called Hall effect which was named after its developer Edwin Hall. Hall sensors are monolithically implemented by Micronas in CMOS technology together with electric circuits such as signal conditioning, evaluation, power management and network interfaces. These products are especially used for angular, positioning, speed, and current measurements. Micronas is one of the leading companies for linear sensors in automotive applications and offers the biggest Hall sensor portfolio for the Automotive and Industrial market worldwide.
- **TMR technology:** A TMR component consists of two ferromagnets separated by a thin insulator. If the insulating layer is thin enough, electrons can tunnel from one ferromagnet into the other. Sensors based on this principle suit for applications such as magnetic field measurements, e.g. as a magnetic compass, as a distance and angular measurement system, or as small potential-free current sensor application. TDK is one of the leading companies offering read/write heads for magnetic hard drives based on the MR effect. TDK is the leader especially in the area of TMR technology.

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2016, TDK posted total sales of USD 10.2 billion and employed about 92,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

About Micronas

Micronas, a TDK group company, is the most preferred partner for sensing and control. Micronas serves all major automotive electronics customers worldwide, many of them in long-term partnerships for lasting success. While the holding company is headquartered in Zurich (Switzerland), operational headquarters are based in Freiburg (Germany). Currently, the Micronas Group employs around 900 persons. For more information about Micronas and its products, please visit www.micronas.com.

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Please forward reader inquiries to media@micronas.com.

Contacts for media

Contact		Phone	Mail
Susy Krucker	Micronas Gmbh	+49 761 517 32 14	Media@micronas.com