Silicon Labs' Magnetic Sensors Modernize Hall-Effect Switch and Position Sensing for the IoT Era

-- Si72xx Hall-Effect Sensors Enhance Power Efficiency, Sensitivity, Ease of Use and Tamper Protection for Industrial, Consumer and Automotive Designs --

AUSTIN, Texas, Sept. 6, 2017 /PRNewswire/ -- Silicon Labs (NASDAQ: SLAB) brings Hall-effect sensing into the 21st century with a magnetic sensor portfolio offering industry-leading power efficiency, best-in-class sensitivity, flexible I2C configuration, and built-in tamper detection and temperature sensing. Silicon Labs' new Si72xx portfolio includes the most advanced, feature-rich magnetic sensors available today, outclassing reed switches and traditional Hall-effect devices in a wide range of open/close and position-sensing applications. The Si72xx magnetic sensors provide solid-state reliability for white goods, flow meters, cordless power tools, wheel and dial-type controls for consumer electronics, industrial alarms, motor controls and door/window security applications. The sensors are AEC-Q100-qualified for automotive applications and designed to withstand harsh industrial environments.

Silicon Labs' Si72xx sensors solve several tradeoffs in selecting the right magnetic sensing solution for power- and cost-sensitive applications. Reed switches consume very little power but are bulky and unreliable. While Hall-effect sensors offer solid-state reliability, they are more power hungry. Traditional Hall-effect designs are also stuck in the past, providing only a few of the programmable capabilities and advanced features offered by other modern sensor types used in IoT applications. Si72xx sensors address these needs by matching the power efficiency of reed switches with the reliability of Hall-effect sensors, while adding more advanced features, higher sensitivity and exceptional configurability.

Ultra-Low Power: Developers can finally add reliable Hall-effect-based sensors to battery-powered systems without impacting the system's battery life. Operating below 100 nA (sleep current) and less than 400 nA for a 5 Hz sampling rate, Si72xx sensors can help designs achieve multiyear and decade-long battery lifetimes, even when powered by very small batteries.

High Sensitivity: The outstanding sensitivity of Si72xx sensors (1.1 mT Bop) enables developers to reduce the size of magnetics in their designs by 50 to 80 percent or extend sensing range by 2x or more.

Configurability: Si72xx sensors can easily be configured, measured and controlled over an I2C interface, providing greater flexibility during design and in the end product. Using an I2C interface dramatically reduces current for position-sensing applications by enabling the sensor to be queried as needed instead of continuously.

Advanced Features: Si72xx sensors include many useful built-in capabilities such as a tamper threshold feature that enables systems to detect attempts to bypass security. Most reed switch and Hall-effect sensor-based security systems can be defeated by a strong external magnetic field. The Si72xx sensors' tamper detection technology detects anomalous magnetic fields, and a built-in self-test mode can be used to verify the sensor's continued accurate operation in the field. Si72xx sensors also include a ±1 °C accurate temperature sensor, eliminating the need for discrete temperature sensing, reducing system size and cost, and enhancing functionality.

The Si72xx sensor portfolio includes three families:

- The Si720x family supports digital output switch and latch capabilities in a variety of sampling rates and sensitivities. These sensors are ideal for applications requiring a periodic on-off signal with the change of a magnetic field.
- The Si721x family includes linear output devices for position-sensing applications that produce signals directly proportional to the strength of the magnetic field. These sensors support different gains and output types including analog, pulse-width modulation (PWM) and the SENT protocol for automotive communications.
- The Si7210 family of I2C-configurable sensors supports all of the features and capabilities of the other two families while providing unmatched design flexibility and programmability.

"Nothing in the Hall-effect sensor market today can match the Si72xx portfolio's combination of ultra-low power, high sensitivity, flexibility, configurability and features," said Tom Pannell, Senior Marketing Director for IoT products at Silicon Labs. "Silicon Labs' comprehensive portfolio enables developers to choose the right magnetic sensor type for their application needs, enabling them to design, test and deploy a wide range of sophisticated position-sensing products – better, faster, cheaper and with longer battery life."

Pricing and Availability
Production quantities and samples of the Si72xx Hall-effect magnetic sensors are available today in industry-standard 3- and 5-pin SOT-23 packages. Si72xx sensor pricing in 10,000-unit quantities begins at $0.45 (USD). The Si72xx-WD-KIT wheel demo kit is available now and priced at $149 (USD MSRP). Showcasing the low power consumption, sensitivity and accuracy of the

Si72xx sensors, the kit includes a pre-programmed EFM32 Happy Gecko starter kit, a wheel demo expansion board and six postage stamp-sized boards to evaluate the various Si72xx sensor types. To order Si72xx Hall-effect magnetic sensor samples and development kits, visit www.silabs.com/magnetic-sensors.

Silicon Labs
Silicon Labs (NASDAQ: SLAB) is a leading provider of silicon, software and solutions for a smarter, more connected world. Our award-winning technologies are shaping the future of the Internet of Things, Internet infrastructure, industrial automation, consumer and automotive markets. Our world-class engineering team creates products focused on performance, energy savings, connectivity and simplicity. www.silabs.com

Connect with Silicon Labs
Silicon Labs PR Contact: Dale Weisman +1-512-532-5871, dale.weisman@silabs.com
Follow Silicon Labs at http://news.silabs.com/, at http://blog.silabs.com/, on Twitter at http://twitter.com/siliconlabs, on LinkedIn at http://www.linkedin.com/company/siliconlabs and on Facebook at http://www.facebook.com/siliconlabs.

Cautionary Language
This press release may contain forward-looking statements based on Silicon Labs' current expectations. These forward-looking statements involve risks and uncertainties. A number of important factors could cause actual results to differ materially from those in the forward-looking statements. For a discussion of factors that could impact Silicon Labs' financial results and cause actual results to differ materially from those in the forward-looking statements, please refer to Silicon Labs' filings with the SEC. Silicon Labs disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Note to editors: Silicon Labs, Silicon Laboratories, the "S" symbol, the Silicon Laboratories logo and the Silicon Labs logo are trademarks of Silicon Laboratories Inc. All other product names noted herein may be trademarks of their respective holders.

SOURCE Silicon Labs

Additional assets available online: Images (2)

https://news.silabs.com/2017-09-06-Silicon-Labs-Magnetic-Sensors-Modernize-Hall-Effect-Switch-and-Position-Sensing-for-the-IoT-Era