Silicon Labs Delivers Industry's First Isolated Analog-to-Digital Converters for Ac Mains Monitoring

New Si890x Isolated ADCs Provide Optimized Line Voltage Monitoring and Digital Isolation for Solar Power Inverters and Power Supplies

"The Si890x family sets a new standard for power management applications that need reduced cost and complexity, robust CMTI performance and flexible interface options."

AUSTIN, Texas--(BUSINESS WIRE)--Silicon Laboratories Inc. (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced the industry's first isolated 10-bit analog-to-digital converter (ADC) products designed specifically for the demands of mains line monitoring. The new Si890x family combines Silicon Labs' patented CMOS-based digital isolation technology and its proven ADC technology to create a robust line voltage monitoring and protection solution for power management applications such as solar power inverters, switched-mode and uninterruptible power supplies, and industrial applications with sensors in high-voltage areas requiring isolated data acquisition.

Isolated ADCs are essential for applications where the power drawn from the ac mains must be monitored. The most common solution for these applications today uses a current transformer coupled with discrete components and a data converter – a bulky approach that drives up the size and complexity of power supplies. While standalone ADCs are available, they require external galvanic isolators to connect to the mains or other high-voltage systems. Other vendors offer isolated ADCs optimized for motor control, but these devices are too costly for the mains monitoring market.

Silicon Labs engineered the Si890x isolated ADCs to meet the needs of the mains monitoring market in ways no other vendors have addressed. The Si890x family provides a much smaller and thinner footprint solution than transformer solutions. Since the Si890x devices integrate the ADC and isolation function, they can transmit power measurements through an isolated serial port for processing by the system controller. The Si890x family features 2.5 and 5 kV isolation ratings that meet critical safety requirements for high-voltage systems such as IEC 60950-1, 61010-1 and 60601-1 standards and UL, CSA and VDE certifications. The family's 5 kV rating enables the devices to be used in demanding industrial and medical applications and universal-powered systems with 120/220 Vac mains supplies. Offering up to 1,200 V working voltage with an isolation barrier lifetime of more than 60 years, these isolated ADCs will outlast the high-voltage systems that use them.

Each ADC input features a 3-channel analog multiplexer (AMUX), which enables a single Si890x isolated ADC to monitor up to three different signals (typically ac mains voltage and current with the third channel serving as a spare). All three members of the Si890x family are supported by the Si890xPWR-KIT evaluation kit, which contains a master controller that enables developers to quickly and easily connect to the ac line and observe waveforms on an oscilloscope or otherwise receive serial data.

"The Si890x devices are a natural extension to our popularSi86xx digital isolator family, providing developers with an isolated ADC solution that hits the price/performance sweet spot of the mains line monitoring market," said Mark Thompson, vice president of access, power and sensor products at Silicon Labs. "The Si890x family sets a new standard for power management applications that need reduced cost and complexity, robust CMTI performance and flexible interface options."

The Si890x family offers a choice of three serial interface options: UART, I^2C and SPI. This interface flexibility enables developers to take advantage of existing communications ports for easy integration into their system designs, and it also allows them to connect to the isolated ADC quickly and easily without changing their system controller. The SPI port option also provides faster data throughput (up to 2.5 Mbps) for bandwidth-intensive applications.

Pricing and Availability

Samples and production quantities of the Si890x isolated ADCs are available now in 16-pin SOIC wide-body packages with a choice of 2.5 or 5 kV isolation ratings. Pricing for the Si890x devices in 10,000-unit quantities ranges begins at $1.65 (USD). Silicon Labs also offers the Si890xPWR-KIT evaluation kit, priced at $149.00 (USD), which enables developers to demonstrate and measure ac line voltage (110 Vac or 220 Vac at 50/60 Hz) and ac line current.

For additional information about Silicon Labs' Si890x isolated ADC family and to purchase samples and development tools, please visit www.silabs.com/pr/isolation.

Silicon Laboratories Inc.

Silicon Laboratories is an industry leader in the innovation of high-performance, analog-intensive, mixed-signal ICs. Developed by a world-class engineering team with unsurpassed expertise in mixed-signal design, Silicon Labs' diverse portfolio of patented semiconductor solutions offers customers significant advantages in performance, size and power consumption. For more information about Silicon Labs, please visit www.silabs.com.

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This press release may contain forward-looking statements based on Silicon Laboratories' 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 Laboratories' financial results and cause actual results to differ materially from those in the forward-looking statements, please refer to Silicon Laboratories' filings with the SEC. Silicon Laboratories disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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