Silicon Labs Reduces Power System Cost and Complexity with 5 kV Isolated Gate Drivers

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AUSTIN, Texas, Apr 21, 2010 (BUSINESS WIRE) -- Silicon Laboratories Inc. (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, has expanded its popular ISOpro(TM) family to include ISOdriver isolated gate drivers that support up to 5 kV isolation ratings. Silicon Labs' new 5 kV-certified Si82xx isolated gate drivers reduce cost and complexity for safety-critical industrial systems and universal-powered systems with 120/220 volt supplies. Target applications include isolated switch mode and uninterruptible power supplies, test and measurement equipment, robotic assemblies, industrial drives, industrial and electric vehicle motor controls, battery and solar inverters, wind turbines, air conditioning systems, plasma displays and electronic lighting ballasts.

"Leveraging Silicon Labs' proprietary and patented RF-based isolation technology, the new ISOdriver ICs combine advanced digital isolation and gate driver capabilities into a single-chip solution," said Diwakar Vishakhadatta, isolation product line director at Silicon Labs. "The high level of integration we've achieved enables developers to simplify their bill of materials, improve efficiency and reduce system cost by eliminating the need for up to 12 external components compared to optocoupler or gate-drive transformer solutions, while at the same time improving system reliability to industrial standards by using CMOS technology."

The new 5 kV Si82xx isolated gate drivers include the Si822x optocoupler-input-compatible devices and the Si823x digital-input devices. The Si822x gate drivers feature a passive diode input type that emulates an optocoupler's input, while providing all the performance benefits that accompany CMOS-based digital isolation. The Si822x devices significantly improve system reliability by providing a functional upgrade for popular optocoupler gate drivers.

The Si822x and Si823x devices feature ultra-fast 50 ns propagation delays - more than five times faster than common optocoupler plus gate driver solutions - for better timing margins and higher system efficiency. Based on mainstream CMOS process technology, ISOdriver devices exhibit none of the performance degradations over time and temperature which are common with optocoupler solutions. Supporting gate drive voltages of up to 24 V and peak output current ranging from 0.5 to 4.0 A, the ISOdrivers deliver best-in-class drive strength for both MOSFET and insulated gate bipolar transistor (IGBT) applications, ensuring fast turn-off and turn-on of external switching transistors for maximum efficiency.

For design flexibility, the new ISOdriver devices are available in high-side/low-side and dual driver versions. The high-side/low-side versions have built-in protection against overlap timing errors, ensuring reliable operation for safety-critical applications. In addition, built-in programmable dead-time control allows the user to tune the power supply system for peak system efficiency - a key feature for high-power applications such as motor control.

Simplifying power system application development

Isolated gate drivers are critical building blocks used within power delivery systems in many electronic products. To help speed time to market for these products, Silicon Labs supports power system designers with cost-effective development tools including an open loop evaluation board (OPENLPPOL-EVB). This 100 kHz to 500 kHz single-phase point-of-load evaluation kit streamlines evaluation of multiple Silicon Labs' digital isolation products including the Si8234 ISOdriver, Si8512 ac current sensor, and Si8540 dc current sensor.

To support development of isolated dc-dc switched mode power supplies, Silicon Labs and National Semiconductor have collaborated on a comprehensive 100 W reference design targeted at high-volume networking and telecom switch mode power supplies (SMPS). Featuring a Silicon Labs ISOpro digital isolator IC and National's LM5035C controller, the reference design and evaluation board provide a fully functional power converter in the industry-standard quarter-brick form factor based on a half-bridge topology. For more information about the SMPS reference design and evaluation board, visit www.silabs.com/pr/SMPSReferenceDesign.

In addition to its expanded Si82xx ISOdriver family, Silicon Labs offers complementary IC products for power supply applications including ISOpro digital isolator ICs, current sensors and small-form-factor mixed-signal microcontrollers (MCUs).

Pricing and Availability

The Si82xx ISOdriver isolated gate driver ICs are available today. Pricing in 10K quantities for Si82xx devices with a 5 kV isolation rating begins at $1.16 USD. The OPENLPPOL-EVB evaluation board is available now for $99 USD. For additional product information and to purchase samples and development tools, please visit www.silabs.com/pr/isolation.

Cautionary Language

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.

Silicon Laboratories Inc.

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Headquartered in Austin, TX, Silicon Labs is a global enterprise with operations, sales and design activities worldwide. The company is committed to contributing to our customers' success by recruiting the highest quality talent to create industry-changing innovations. For more information about Silicon Labs, please visit www.silabs.com.

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