Silicon Labs Expands Digital Isolation Portfolio with Robust 10 kV Surge Protection

New Si86xxxT Digital Isolator Family Protects Industrial Equipment against Secondary Lightning Strikes

“For many industrial and green energy applications, 10 kV isolation is a must-have requirement to protect sensitive equipment from secondary lightning strikes and power surges”

AUSTIN, Texas--(BUSINESS WIRE)--Silicon Labs (NASDAQ: SLAB), a leading provider of digital isolation technology for industrial automation and Internet infrastructure, today introduced a new family of multi-channel digital isolators featuring a high-voltage isolation barrier designed to withstand 10 kV surge hits. Based on Silicon Labs’ proprietary capacitive isolation technology, the new Si86xxxT digital isolator family provides robust protection against secondary lightning strikes and increases system reliability in a wide range of demanding industrial applications.

Silicon Labs’ Si86xxxT digital isolator family delivers the industry’s fastest, most accurate timing specifications, highest noise immunity and reliability, lowest electromagnetic noise emissions and longest lifetimes under high-voltage conditions. The Si86xxxT digital isolators are ideal for applications that must withstand a 10 kV hit such as microinverters, base station power supplies, process manufacturing equipment, motor controls and drives, industrial uninterruptible power supplies, metering equipment and battery management systems for electric vehicles.

Developers of industrial applications expect reinforced isolation products to provide fail-safe protection from secondary lightning strikes, especially in applications where equipment is installed outdoors and where exposed cables or wires are vulnerable to lightning. In addition to requiring surge ratings of up to 10 kV, industrial equipment developers also demand isolation products with fast timing, high noise immunity, long lifetimes at high voltages, and a wide VDD and temperature range. These specifications help developers enhance the efficiency, effectiveness and safety of their system designs. The Si86xxxT family provides a best-in-class 10 kV isolation solution by satisfying all of these design requirements.

The Si86xxxT family includes a wide range of dual- to quad-channel devices in wide-body packages to accommodate diverse application needs with higher isolation ratings. Pin-compatible with existing digital isolators from Silicon Labs and other isolation suppliers, the Si86xxxT family offers substantial data rate, propagation delay, power, size, reliability and external bill of materials (BOM) advantages over legacy isolation technologies.

The operating parameters of Si86xxxT digital isolators remain stable across wide temperature ranges and throughout the device service life for ease of design and highly uniform performance. The 10 kV surge capability qualifies Si86xxxT isolators as “Reinforced VDE” components, a standard of high importance for many industrial, telecom and automotive applications. Long lifetimes are particularly important to meet typical product lifetime for industrial uses.

All Si86xxxT digital isolators have Schmitt trigger inputs for high noise immunity, and these highly integrated devices only require VDD bypass capacitors, reducing BOM cost and complexity. The Si86xxxT devices support data rates up to 150 Mbps with propagation delays of 10 ns. Enable inputs provide a single point of control for enabling and disabling the output drive.

“For many industrial and green energy applications, 10 kV isolation is a must-have requirement to protect sensitive equipment from secondary lightning strikes and power surges,” said Ross Sabolcik, vice president of access and isolation products at Silicon Labs. “We have expanded our digital isolation portfolio to meet this critical customer need. In addition to providing robust 10 kV surge protection, our new Si86xxxT digital isolators lead the industry in timing specifications, noise immunity, reliability and high-voltage lifetime.”

Si86xxxT Digital Isolator Family Highlights

- Robust 10 kV surge withstand capability for secondary lightning protection
- Fastest, most accurate timing specs with low propagation delay (10 ns) and low skew (1 ns)

- Highest noise immunity (CMTI) of 100 kV/µs and lowest electromagnetic noise emissions (20 dB lower than competing digital isolators)
- Long lifetimes under high-voltage conditions (100 years at 1000 V)
- Low-power isolation solution with 1.8 mA maximum power per channel at 10 Mbps
- Flexible ordering options: multiple channels, package configurations and a selectable fail-safe operating mode to control the default output state during power loss

Pricing and Availability

Samples and production quantities of the Si86xxxT digital isolators are available now in a variety of compact wide-body packages. Pricing in 10,000-unit quantities begins at $1.52 for a two-channel Si862xxT device; $2.17 for a three-channel Si863xxT device; and $2.93 for a four-channel Si864xxT device. (All prices are in USD.) The Si86xxTISO-KIT evaluation kit, priced at $29.00 (USD MSRP), is available now to help developers evaluate and implement 10 kV isolation barriers in their applications. For additional information about Silicon Labs' Si86xxxT digital isolator family and to purchase samples and development tools, please visit www.silabs.com/isolation.

Silicon Labs

Silicon Labs (NASDAQ: SLAB) is a leading provider of silicon, software and system solutions for the Internet of Things, Internet infrastructure, industrial automation, consumer and automotive markets. We solve the electronics industry's toughest problems, providing customers with significant advantages in performance, energy savings, connectivity and design simplicity. Backed by our world-class engineering teams with unsurpassed software and mixed-signal design expertise, Silicon Labs empowers developers with the tools and technologies they need to advance quickly and easily from initial idea to final product. www.silabs.com

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Contact:

Silicon Labs
Dale Weisman, +1-512-532-5871
dale.weisman@silabs.com

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