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Silicon Labs Introduces New Ultra-Low-Power Temperature Sensors

High-Precision Si705x Sensor Family Offers Exceptional Accuracy Across Full Operating Temperature Range with Best-in-Class Power Efficiency

AUSTIN, Texas--(BUSINESS WIRE)-- Silicon Labs (NASDAQ: SLAB), a leading provider of environmental and optical sensing solutions for the Internet of Things and industrial automation, today introduced a new family of high-precision temperature sensors offering industry-leading power efficiency. Silicon Labs' ultra-low-power Si705x temperature sensors consume only 195 nA (typical average current) when sampled once per second, which minimizes self-heating and enables multi-year coin cell battery operation. Unlike traditional digital temperature sensors, the Si705x devices maintain their accuracy across the full operating temperature and voltage ranges and offer four accuracy levels up to +/-0.3 °C. The sensors are ideal for HVAC, white goods, computer equipment, asset tracking, cold chain storage, industrial control and medical equipment. AEC-Q100-qualified versions are also available for automotive applications.

Traditional approaches to temperature sensing that use thermistors or embedded MCU temperature sensors suffer from poor accuracy and higher power consumption. Although improved accuracy can be achieved through end-of-line calibration, this technique presents additional manufacturing costs and challenges while accuracy is still susceptible to variations in power supply voltage. In contrast, the Si705x sensors' patented signal processing technology provides stable temperature accuracy over the entire operating voltage and temperature ranges without the need for costly end-of-line production calibration. In addition, the integrated low-power analog design delivers an optimal price/performance solution with up to 35 times better power efficiency than competing temperature sensor products.

Available in a compact 3 mm x 3 mm DFN package, the Si705x sensors feature an industry-standard I^2C interface for easy configuration. Each device provides up to 14-bit temperature resolution for high-precision measurement, and the -40 to +125 °C temperature range is suitable for consumer, industrial and automotive applications. With a low 1.9 V minimum power supply voltage, the Si705x sensors can be connected directly to a battery without the need for an external voltage regulator.

"Temperature is the most pervasive environmental metric that embedded developers need to measure, and today's designers expect exceptional power efficiency, accuracy and price/performance from their temperature sensing solutions," said Ross Sabolcik, vice president and general manager of Silicon Labs' Analog, Power and Sensor products. "Although many competing options are available for temperature sensing, the Si705x devices provide the most power-efficient option while maintaining accuracy across the entire operating voltage and temperature range so developers don't need to compromise on performance."

The Si705x temperature sensors are the newest members of Silicon Labs' growing portfolio of environmental and optical sensor products for the Internet of Things, consumer and industrial automation markets. Silicon Labs' sensor portfolio includes relative humidity (RH) and temperature sensors, proximity and ambient light sensors, UV index and ambient light sensors, and capacitive touch sensors, as well as isolated ac current sensors and high-side dc current sensors for power management applications.

The Si705x temperature sensors are pin-compatible and software-compatible with Silicon Labs' popular Si70xx RH and temperature sensor family. This compatibility enables existing RH sensor designs and software to be reused easily for temperature-only applications.

Pricing and Availability

Samples and production quantities of Silicon Labs' Si705x temperature sensors are available now. Si705x sensor pricing in 10,000-unit quantities begins at $0.61 (USD). The Si705x USB dongle evaluation kits, priced at $49 (USD MSRP), streamline Si705x sensor evaluation and application development. The Si705x USB dongle kits are supported by a Windows-based GUI that simplifies control of the Si705x sensors and temperature measurements. A variety of source code and driver examples is available in Silicon Labs' Simplicity Studio development environment. For additional Si705x product information, to order samples and evaluation kits, and to download development software, visit www.silabs.com/temperature-sensors.

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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