

Next-Generation Silicon Labs Optical Sensors Enhance UV Protection and Gesture Recognition

Si1133/53 Sensors Provide Accurate Measurement of Ultraviolet Radiation and Improved Daylight Performance and Range for Proximity Sensing

“Continual advances in optical sensing hold the key to product design innovations that enhance consumer health, safety and convenience”

AUSTIN, Texas--([BUSINESS WIRE](#))--[Silicon Labs](#) (NASDAQ: SLAB) has introduced next-generation optical sensors that can be used to protect consumers from the harmful effects of ultraviolet (UV) radiation and to develop innovative touchless user interfaces leveraging high-performance proximity sensing and gesture recognition. Silicon Labs' new Si1133 optical sensor provides a cost-effective solution for adding highly accurate UV index measurement capabilities to a wide range of sports equipment and outdoor lifestyle products. The Si1153 ambient light sensor is optimized for operation in bright daylight conditions and extended range, allowing it to be used for gesture control and proximity detection applications in outdoor environments.

Get all the details about Silicon Labs' new [Si1133 UV index](#) and [Si1153 proximity/gesture detection](#) sensors including pricing and availability, development tools and data sheets at www.silabs.com/sensors.

Accurate UV Index Sensing

Overexposure to UV light has long been recognized as harmful, especially for people with elevated risks of sunburn and potentially fatal melanoma. The World Health Organization (WHO) estimates that 66,000 deaths occur annually from melanoma and other skin cancers. The Si1133 sensor enables accurate measurement of UV index levels to help gauge the sun's intensity and prevent skin damage. The Si1133 sensor can be incorporated easily and economically into a wide range of cost-sensitive outdoor recreation products such as sports and fitness wearables, backpacks, bicycle helmets, sunglasses, beach/patio furniture and sun lotion packaging. Products equipped with the Si1133 sensor help enable consumers to monitor their UV exposure and safely maximize their time spent outdoors. The Si1133 UV sensor provides an output, via its I²C serial interface, that directly corresponds to the digital UV index defined by the World Health Organization. The Si1133 device also senses ambient light levels, which conveniently allows for automatic brightness adjustment of associated output displays.

Si1133 UV Index Sensor Key Features

- Exceptional UV measurement accuracy: ± 1.5 on the UV scale
- Ambient light sensing supporting < 100 mlx resolution and operation under dark glass
- Highly integrated solution reducing cost and complexity with on-chip dual 23-bit ADCs, DSP, and high-sensitivity visible light, UV and infrared (IR) photodiodes
- I²C serial communications with up to 3.4 Mbps data rate
- Ultra-low power for longer battery life: 500 nA standby current
- Small 2 mm x 2 mm QFN package

High-Performance Proximity Sensing

The Si1153 sensor offers significant performance improvements for proximity sensing and gesture recognition in daylight conditions, enabling a host of user interface innovations. Unlike many competing sensors best suited to indoor environments, these new sensors can be used outdoors in high ambient light and over an extended range of up to 2 meters. The Si1153 sensors are ideal for gesture-based operation of automotive infotainment systems, bicycle computers and other outdoor sports equipment, making it easier and safer for consumers to control electronic devices without taking their eyes off the road or tasks at hand. The sensors are also a good fit for ATMs, point-of-sale (POS) terminals, door entry systems, and other proximity sensing applications requiring both extended range and exceptional daylight performance.

Si1153 Proximity Sensor Key Features

- Proximity detection adjustable from under 1 cm up to 200 cm
- Up to 3 independent LED drivers supporting multi-axis proximity motion detection
- Ambient light sensing supporting < 100 mlx resolution and operation under dark glass
- Highly integrated solution reducing cost and complexity with on-chip dual 23-bit ADCs, DSP, and high-sensitivity visible

light and IR photodiodes

- I²C serial communications with up to 3.4 Mbps data rate
- Ultra-low power for longer battery life: 500 nA standby current
- Two package options: 2 mm x 2 mm QFN and 2.9 mm x 4.9 mm module with LED

“Continual advances in optical sensing hold the key to product design innovations that enhance consumer health, safety and convenience,” said Daniel Cooley, vice president of marketing for Silicon Labs’ IoT products. “Our next-generation Si1133 and Si1153 sensors provide developers with state-of-the-art technology that makes it easy and cost-effective to add accurate UV index measurement and high-performance proximity sensing and gesture detection to a wide array of consumer, automotive and commercial applications.”

Silicon Labs supports optical sensing development with the [115XOPT-EXP-EVB multi-use evaluation board](#), which showcases all features of the Si1133 and Si1153 sensors and simplifies the evaluation of UV, ambient light and proximity sensing and gesture detection.

Pricing and Availability

Samples and production quantities of the Si1133-AA00-GM UV index sensor are available now and priced at \$1.13 (USD) in 10,000-unit quantities. Samples and production quantities of the Si1153 proximity/gesture detection sensor are also available now in three versions: the extended-range Si1153-AA00-GM priced at \$1.84, the Si1153-AA09-GM with enhanced daylight performance priced at \$1.91, and the Si1153-AA9X-GM module with integrated IR LED priced at \$2.32 (all prices in USD and 10,000-unit quantities). The 115XOPT-EXP-EVB evaluation kit is available now and priced at \$44.43 (USD MSRP). For additional Si1133 and Si1153 product information and to order samples and evaluation boards, please visit www.silabs.com/sensors.

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