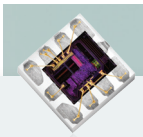


SENSOR SOLUTIONS

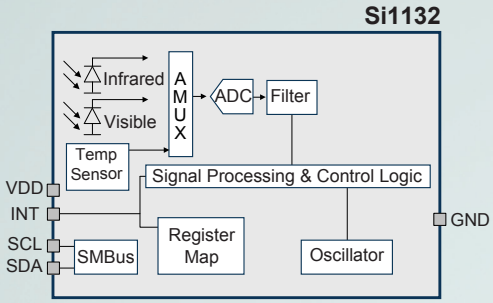
Optical Sensors

www.silabs.com/sensors




Si1132 Ultraviolet (UV) Index and Ambient Light Sensor

The monolithic Si1132 sensor integrates multiple photodiodes, an analog-to-digital converter, a signal processor and a digital I²C control interface in an impressively small 2 mm x 2 mm clear QFN package. This UV Index and ambient light sensor enables fitness wrist/arm bands, smart watches, and smartphones to differentiate by measuring UV sun exposure. Customers can benefit by receiving a warning of when their current UV exposure is unhealthy or to determine their cumulative UV exposure during exercise. This measurement is critical for people with an elevated risk of sunburn or anyone who is concerned about their sun exposure.



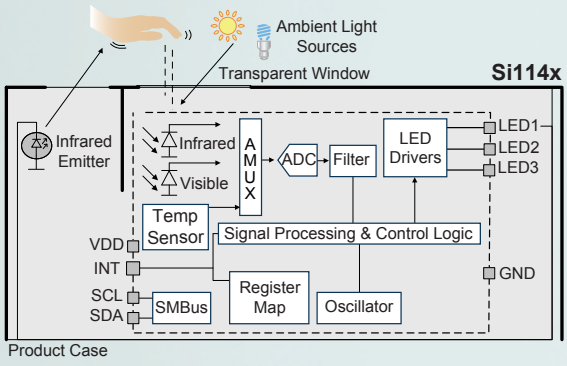
Si1132 FEATURES

- Digital UV Index sensor enables real-time UV sun exposure and cumulative UV sun exposure
- Ambient light sensor with 0.1 to 128 kLux dynamic range operates in direct sunlight
- Long battery life with as little as 1.2 µA average current UV Index measurements, < 500 nA standby, and 1.7 V to 3.6 V operation
- I²C interface for ease of communication with host MCU
- Tiny 2 mm x 2 mm clear QFN package
- Operating temperature – 40 to 85 °C

IDEAL FOR BATTERY-POWERED APPLICATIONS

Si114x Multi-LED Proximity and Ambient Light Sensors

The monolithic Si114x sensors integrate multiple photodiodes, an analog-to-digital converter, a signal processor, up to 3-LED drivers and a digital I²C control interface in an impressively small 2 mm x 2 mm clear QFN package. This low-power sensing family enables long battery life with standby less than 500 nA and an average power of as little as 1.2 uA with once per second real-time UV Index measurements. Capable of controlling one, two and three-LED systems, the sensors enable developers to implement proximity detection with a range over 50 cm, multi-dimensional systems capable of advanced 2D/3D motion sensing, heart rate/pulse oximetry measurements, or cheek detection. The robust sensing architecture works in direct sunlight and includes an ambient light sensor capable of sensing light levels up to 128 kLux.



Si114x FEATURES

- Ultra-sensitive photodiode with over 50 cm proximity range
- Up to 3 LED drivers for heart rate/pulse oximetry, proximity detection, 2D/3D gestures and cheek detection
- Fast, single pulse proximity measurement results in best-in-class power consumption
- Optional UV Index sensor enables real-time UV sun exposure and cumulative UV sun exposure
- Long battery life with as little as 1.2 µA average current UV Index measurements, < 500nA standby and 1.7 V to 3.6 V operation
- Ambient light sensor with 0.1 to 128 kLux dynamic range operates in direct sunlight
- I²C interface for ease of communication with host MCU
- Tiny 2 mm x 2 mm clear QFN package
- Operating temperature – 40 to 85 °C

CONTROLS 1, 2 AND 3-INFRARED LED SYSTEMS

MORE INFORMATION AND DOCUMENTATION DOWNLOADS AT: www.silabs.com/sensors

SILICON LABS

Engineering for a mixed-signal world.

Optical Sensors

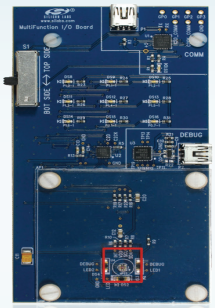
www.silabs.com/sensors

Development Support

Silicon Labs offers complete tools to help designers throughout the entire project. Hardware and software platforms are available to help easily set up and configure, compile and debug a project.

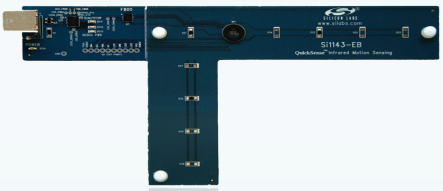
Si114x Programmer's Toolkit Software Tools

The Si114x Programmer's Toolkit API enables rapid development of Si114x software in a PC environment using Silicon Labs' Si114x evaluation boards. By emulating an IC interface over USB, the Si114x Programmer's Toolkit API allows source code to be developed on a PC and then migrated quickly and easily to an MCU environment once target hardware is available. Either commercially-available or free PC-based C compilers can be used for software development with the Si114x Programmer's Toolkit API. The Si114x Programmer's Toolkit can be downloaded from **www.silabs.com/optical-sensor-software**



Si114x INFRARED MULTI-FUNCTION BOARD EVALUATION KIT

Si114x AND SI1132 UV INDEX AND TOUCHLESS SLIDER EVALUATION KIT



Si1140 MOTION SENSING DEVELOPMENT KIT

Optical Sensors Product Selector Table

PART NUMBER	DESCRIPTION	UV INDEX	LED DRIVERS	GESTURE/MOTION SENSING	ALS	INTERFACE	PACKAGE	DEV KIT
Si1132	UV Index/Ambient Light Sensor	•	—	—	•	I²C/SMBus	2 x 2 mm QFN10	UVIRSLIDER2EK
Si1147	UV Index/Proximity/Ambient Light Sensor	•	3	3D gesture detection	•	I²C/SMBus	2 x 2 mm QFN10	UVIRSLIDER2EK
Si1146	UV Index/Proximity/Ambient Light Sensor	•	2	3D gesture detection	•	I²C/SMBus	2 x 2 mm QFN10	UVIRSLIDER2EK
Si1145	UV Index/Proximity/Ambient Light Sensor	•	1	Motion sensing	•	I²C/SMBus	2 x 2 mm QFN10	UVIRSLIDER2EK
Si1143	Proximity/Ambient Light Sensor		3	3D gesture detection	•	I²C/SMBus	2 x 2 mm QFN10	Si1140DK
Si1142	Proximity/Ambient Light Sensor		2	3D gesture detection	•	I²C/SMBus	2 x 2 mm QFN10	Si1140DK
Si1141	Proximity/Ambient Light Sensor		1	Motion sensing	•	I²C/SMBus	2 x 2 mm QFN10	Si1140DK
Si1120	Proximity/Ambient Light Sensor		1	Motion sensing	•	PWM	3 x 3 mm ODFN8	Si1120EK
Si1102	Proximity Sensor		1	—		Digital (On/Off)	3 x 3 mm ODFN8	Si1102EK

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