CM3512

UV Light Sensor with I²C Interface

Rev:1.0 Revised 25th-Oct-2012

Descriptions

CM3512 is an advanced ultraviolet (UV) light sensor with I²C protocol interface and designed by the CMOS process. It is easily operated via a simple I²C command. The active acknowledge (ACK) feature with threshold windows setting allows the UV sensor to send out a UVI alert message. Under a strong solar UVI condition, the smart ACK signal can be easily implemented by software programming.

CM3512 incorporates a photodiode, amplifiers, and analog/digital circuits into a single chip. CM3512's adoption of Capella's patented Filtron™ UV technology provides the best spectral sensitivity to cover UVA/UVB spectrum sensing. It has excellent temperature compensation and a robust refresh rate setting that does not use an external RC low pass filter. CM3512 has linear sensitivity to solar UV light and is easily adjusted by an external resistor. Software shutdown mode is provided, which reduces power consumption to less than 1 μA. CM3512's operating voltage ranges from 2.7 V to 5.5 V.

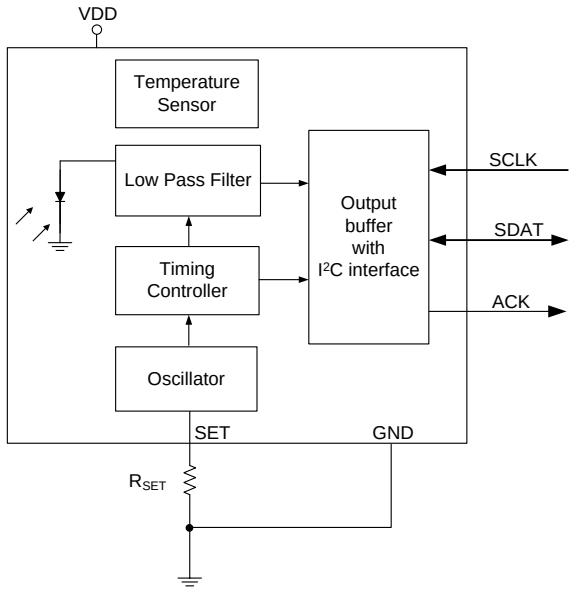
Features

- Converts solar UV light intensity to digital data
- High UV sensitivity and linearity via Filtron™ technology
- Excellent performance of UV radiation measurement under long solar UV exposure
- Excellent temperature compensation
- High dynamic detection resolution
- Standard I²C protocol interface
- Support acknowledge feature (ACK)
- Immunity to fluorescent light flicker
- Software shutdown mode control
- Operation voltage of 2.7V to 5.5V
- Package: OPLGA (2.35 x 1.8 x 1.0 mm)
- Lead-free package (RoHS compliant)

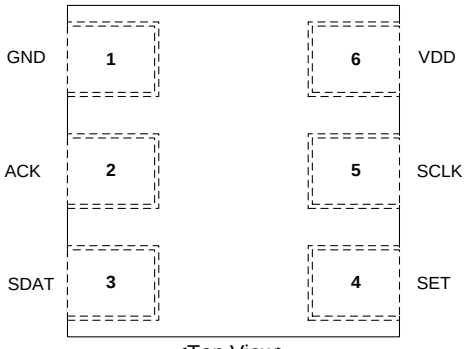
Applications

- Solar UV indicator, Gift
- Cosmetic / Outdoor sport handheld product
- Consumer products

Block Diagram



Pin Definition



<Top View>

1	Ground	4	UV Light Sensitivity Adjust
2	Acknowledge	5	I²C Clock
3	I²C Data	6	Power

Ordering Information

PART NUMBER	PACKING	PACKAGE	PIN NO.	QUANTITY	LEAD FREE
CM3512A3OP	Tape and Reel	2.35 x 1.8 x 1.0mm	6	2500	Compliant

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT	CONDITION
Operating temperature	T_A	-40	+85	°C	
Supply voltage	V_{DD}	0	6.0	V	

Recommended Operating Conditions

PARAMETER	SYMBOL	MIN	MAX	UNIT	CONDITION
Operating temperature	T_A	-40	+85	°C	
Supply voltage	V_{DD}	2.7	5.5	V	
I^2C operating frequency	$f_{(I2CCLK)}$	10	400	kHz	

Pin Descriptions

PIN ASSIGNMENT	SYMBOL	TYPE	FUNCTION
1	GND	I	Power supply ground. All voltages are reference to GND
2	ACK	O (Open Drain)	Acknowledge pin
3	SDAT	I/O (Open Drain)	I^2C digital serial data output to the host
4	SET		Light reading adjustment. Connect a resistor to GND.
5	SCLK	I	I^2C digital serial clock input from the host
6	VDD	I	Supply voltage

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