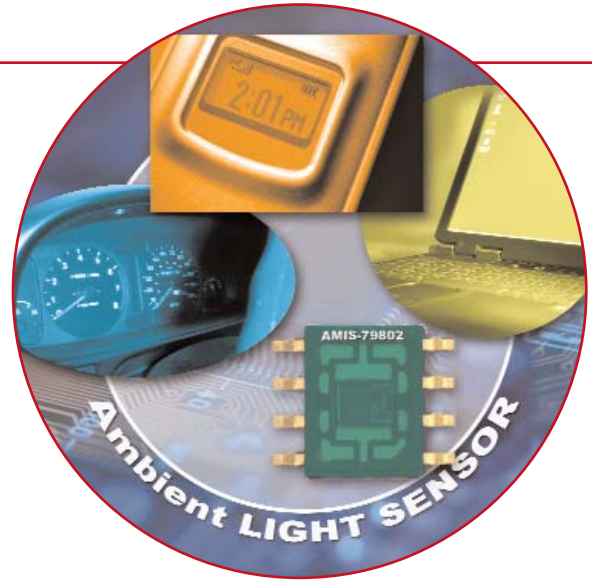


AMIS-74980x Ambient Light Sensor

Key Features

- Small, integrated solution
- Approximates human eye response
- Reports multi-level ambient light intensity
- Flexible design
 - Large dynamic range
 - User programmable integration time
 - Analog output options
 - Digital output options (16-bits): SMBus, I²C
- Programmable - based on application
- Low power design
- Flicker filtering (fluorescent 50Hz - 60Hz)
- Standard CMOS process technology
- Single, two or tri-color (second generation) diode sensors for different accuracies



Product Description

The AMIS-74980x is a wide dynamic range light sensor with an analog or digital output. There are several versions of the analog output; one with 1uA current output at 1000lux all the way to 1mA at 1000lux. The digital output version has a built-in 16-bit ADC with a 2-

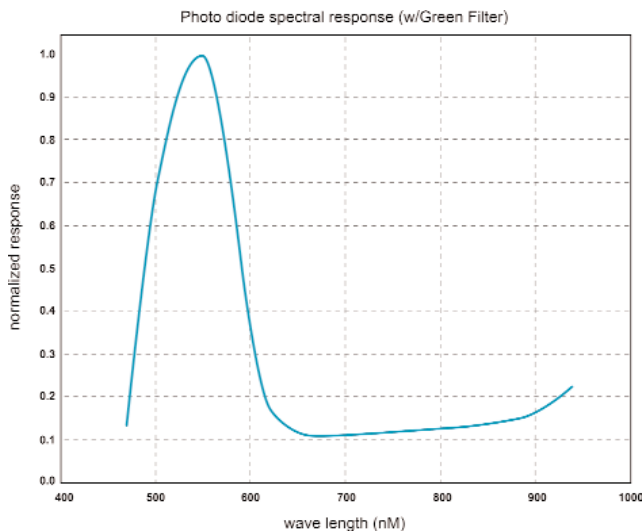
wire SMBus or I²C digital interface. The sensor employs AMI Semiconductor's proprietary CMOS image sensing technology which provides low noise and high dynamic range output signals and a light response similar to the response of the human eye.

Application Information

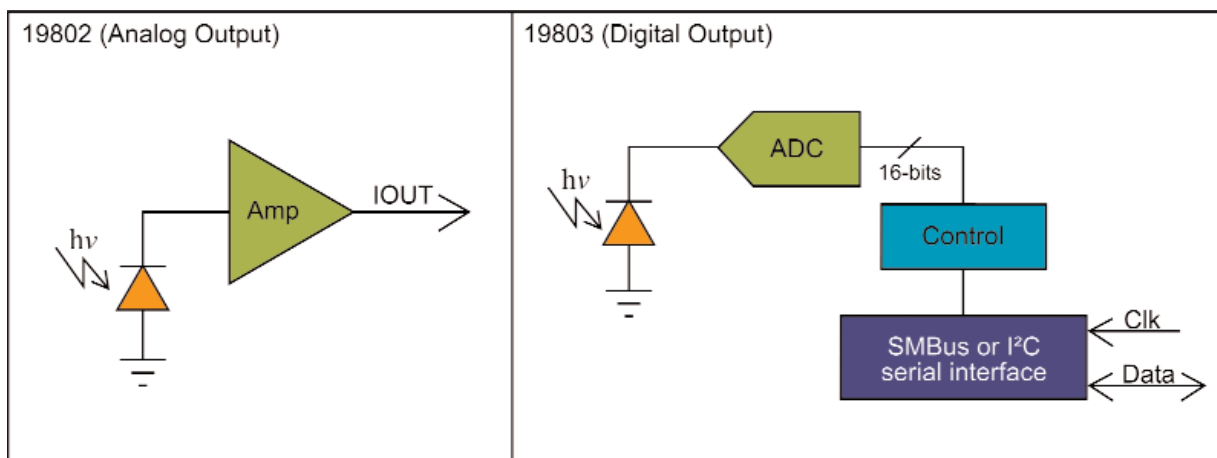
The AMIS-74980x is primarily used in ambient light detection applications, such as a displays back control, where adjustments are made to display brightness or contrast based on the brightness of the ambient light, as perceived by the human eye. Conventional SI detectors

respond too strongly to infrared light - a large component of incandescent lighting - preventing natural human eye response. The AMIS-74980x effectively filters infrared light through proprietary techniques providing human eye response.

Spectral Responses



Block Diagram



Typical Applications

- PDA and handheld displays
- Cellular phone displays
- LCD monitors
- TV screens
- Large format LED displays
- Automotive
 - In-car entertainment systems (video)
 - GPS displays
 - Headlamps
 - Rearview mirrors
 - Dashboards

Terminal Functions

Analog output:

Name	Pin #	Type	Description
GND	1		Power supply ground. All voltages are referenced to GND.
Data	3	O	Current output
V _{DD}	2		Supply voltage

Digital (SMBus or I²C) output:

Name	Pin #	Type	Description
GND	4		Power supply ground. All voltages are referenced to GND.
CLK	5	I	Serial clock input terminal - clock signal for I ² C or SMBus serial data
Data	8	IO	Serial data IO terminal - serial IO I ² C or SMBus serial data
V _{DD}	1		Supply voltage

Operating Characteristics

Analog output:

	Typical	Units
Supply voltage	3.3V ± 10%	V
Operating temperature	0 - 70°	C
Output current at: E _v = 1000lux, λ _p = 550nm	10, 100, 250, 500, or 1000	uA
Dark current at: E _v = 0lux, Temp = 25°C	0.12	nA

Digital (SMBus or I²C) output:

	Typical	Units
Supply voltage	3.3V ± 10%	V
Operating temperature	0 - 70°	C
Operating frequency	10 - 100 or up to 400kHz (I ² C)	kHz
Active current	0.35	mA
Output counts at: E _v = 1000lux, λ _p = 550nm	65536	counts
Output counts at: E _v = 0lux, Temp = 25°C	1	counts

Contact your local sales office at www.amis.com/sales for more information.

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