

Ambient Light Sensor IC Series

Digital 16bit Serial Output Type Ambient Light Sensor IC

BH1730FVC

General Description

BH1730FVC is a digital Ambient Light Sensor IC with I²C bus interface. This IC is most suitable for obtaining ambient light data for adjusting LCD and backlight power of TV and mobile phone. It is capable of detecting a very wide range of illuminance.

Features

- I²C bus Interface
f/s Mode Support, Slave Address "0101001"
- 2 outputs with peak wavelengths of visible light and infrared light respectively.
- Illuminance to digital converter
- Low current by power down function
- 50Hz / 60Hz light noise reject function
- Light source dependency is small by the calculation using 2 outputs. (e.g. Incandescent lamp, Fluorescent lamp, Halogen lamp, White LED and Sun light)
- Built-in interrupt function
- Sensitivity adjustment function for compensation for illuminance decrease by optical window

Key Specifications

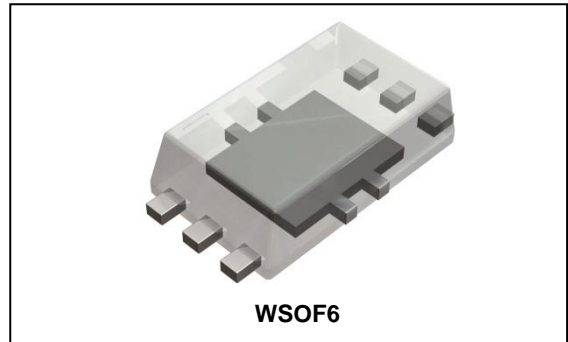
- Supply Voltage Range: 2.4V to 3.6V
- I²C I/O Voltage: 1.65V to V_{CC} V
- Detection Range: 0.001 lx to 100k lx
- Current Consumption: 150 μA (Typ)
- Power Down Current: 0.85 μA (Typ)
- Operating Temperature Range: -40°C to +85°C

Package

WSOF6

W(Typ) x D(Typ) x H(Max)

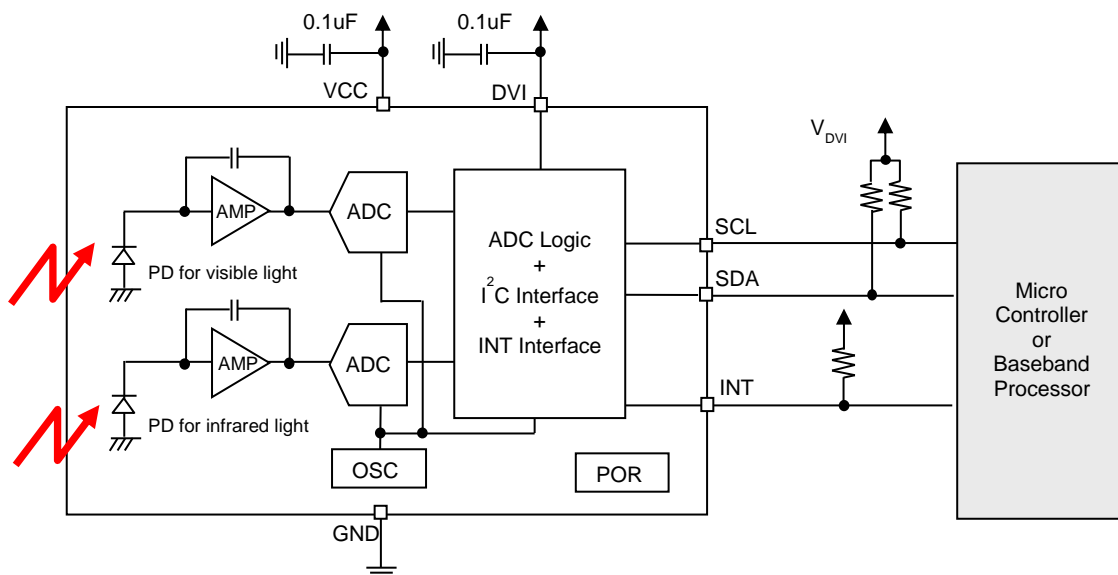
1.60mm x 3.00mm x 0.75mm



Applications

LCD TV, Mobile Phone, Tablet PC, Note PC,
Digital Camera, Portable Game Machine

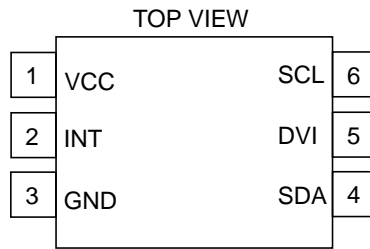
Typical Application Circuit



○Product structure : Silicon monolithic integrated circuit.
○This product does not include laser transmitter.
○This product includes Photo detector, (Photo Diode) inside of it.

○This product has no designed protection against radioactive rays.
○This product does not include optical load.

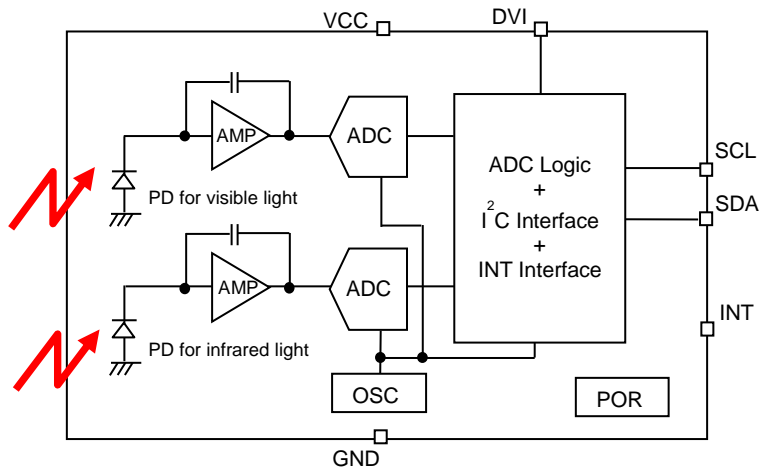
Pin Configuration



Pin Description

Pin No.	Pin Name	Function
1	VCC	Power supply terminal
2	INT	INT pin output terminal. If not in use, connect to GND or leave it open.
3	GND	GND terminal
4	SDA	I ² C bus interface SDA terminal
5	DVI	I ² C bus I/O voltage
6	SCL	I ² C bus interface SCL terminal

Block Diagram



Description of Blocks

1. PD
Photo diodes (PD) with peak wavelengths of visible light and infrared light respectively.
2. AMP
Integrating AMP for converting PD current to voltage.
3. ADC
Analog-to-Digital Converter for obtaining 16bit digital data.
4. ADC Logic + I²C Interface + INT Interface
ADC control logic and I/F logic interface.
5. OSC
Oscillator for clock of internal logic.
6. POR
Power ON Reset. Please refer to "Power ON Sequence" on P14.