

Ambient Light Sensor IC Series

Analog Current Output Type Ambient Light Sensor IC


BH1620FVC

No.09046EBT03

●Descriptions

BH1620FVC is an analog current output ambient light sensor. This IC is the most suitable to obtain the ambient light data for adjusting LCD and Keypad backlight of Mobile phone for power saving and better visibility

●Features

- 1) Compact surface mount package 1.6 × 1.6 mm
- 2) Spectral sensitivity close to human eyes sensitivity.
- 3) Output current in proportion to brightness.
- 4) Supply voltage operates from 2.4V to 5.5V
- 5) Built-in shutdown function
- 6) 3 steps controllable output current gain.
- 7) 1.8V logic input interface
- 8) Low sensitivity variation (+/-15%)

●Applications

Mobile phone, LCD TV, PDP TV, Laptop PC, Portable game console, Digital camera, Digital video camera, Car navigation, PDA, LCD display

●Absolute Maximum Ratings

| Parameter | Symbol | Limits | Units |
|-----------------------|---------|---------|-------|
| Supply Voltage | Vmax | 7 | V |
| Operating Temperature | Topr | -40~85 | °C |
| Storage Temperature | Tstg | -40~100 | °C |
| Output Current | Ioutmax | 7.5 | mA |
| Power Dissipation | Pd | 165* | mW |

* 70mm × 70mm × 1.6mm glass epoxy board. Derating at 2.2 mW/°C for operating above Ta=25°C.

●Operating Conditions

| Parameter | Symbol | Min. | Typ. | Max. | Units |
|-------------|--------|------|------|------|-------|
| Vcc Voltage | Vcc | 2.4 | 3.0 | 5.5 | V |

●Electrical Characteristics (Vcc = 3.0V, Ta = 25°C, unless otherwise noted)

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|-------------------------------------------------|-------------------|------|------|------|-------|------------------------------------------------------|
| Supply Current1 (Operate) | Icc1 | 48.5 | 71 | 97 | μA | Ev=100 lx (H-Gain Mode)* |
| Supply Current2 (0 lx) | Icc2 | 4.5 | 9 | 13.5 | μA | Ev=0 lx (H-Gain Mode) |
| Supply Current3 (Shutdown) | Icc3sd | - | 0.2 | 0.4 | μA | V _{GC1} =V _{GC2} =0 No Input Light |
| IOUT Output Current1(Dark Current) | Iout1 | - | - | 0.2 | μA | Ev=0 lx |
| IOUT Output Current2 | Iout2 | 48.5 | 57 | 65.5 | μA | Ev=100 lx (H-Gain Mode)* |
| Peak Wave Length | λp | - | 560 | - | nm | |
| Incandescent/Fluorescent Light Current Ratio | rIF | - | 1.0 | - | times | Ev=100 lx |
| Saturated Output Voltage | V _{OMAX} | 2.6 | 2.9 | 3.0 | V | Ev=100 lx, RL=220kΩ (H-Gain Mode)* |
| GC1,GC2 Input 'L' Voltage | V _{IL} | 0 | - | 0.4 | V | |
| GC1,GC2 Input 'H' Voltage1 | V _{IH1} | 1.4 | - | Vcc | V | 2.4V ≤ VCC ≤ 3.6V |
| GC1,GC2 Input 'H' Voltage2 | V _{IH2} | 2.0 | - | Vcc | V | 3.6V < VCC ≤ 5.5V |
| Wake-up Time | twu | - | 45 | 128 | μs | Shutdown → H-Gain Mode Ev=100lx* |
| Gain Ratio H-Gain Mode/M-Gain Mode | rHM | 9.5 | 10 | 10.5 | times | Ev=100lx* |
| Gain Ratio M-Gain Mode/L-Gain Mode | rML | 9.5 | 10 | 10.5 | times | Ev=100lx* |

* White LED is used as optical source