

IR-BLOC™ Ambient Light Sensor

IR-Blocking Silicon Phototransistor

Type: VT9802(H)

Revision: 00

Date: 2010.01.11



IR-Blocking silicon phototransistor

Overview

The IR-BLOC™ family is the only ambient light sensor family in the market that comes in a low-cost package with the IR-blocking feature fully incorporated in a plastic epoxy package.

The spectral response is similar to the human eye and a photocell, making it ideal for applications where the response should only be influenced by visible light.

As part of the IR-BLOC™ family of ambient light sensors, PerkinElmer is introducing the VT9802(H), a silicon phototransistor that is offered in a standard, flat, Ø5mm end-looking two-lead package. It offers the silicon phototransistor with the additional IR-blocking feature incorporated in its plastic epoxy package.

As such, it offers a cadmium-free alternative to photocells.

Features and Benefits

- Visible light response with IR-blocking feature incorporated into cast epoxy
- RoHS compliant, Cadmium-free alternative to photocells
- Low dark current
- Linear current output over illumination

Applications

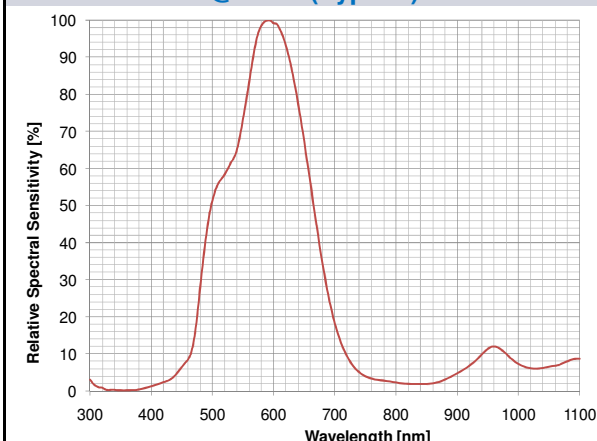
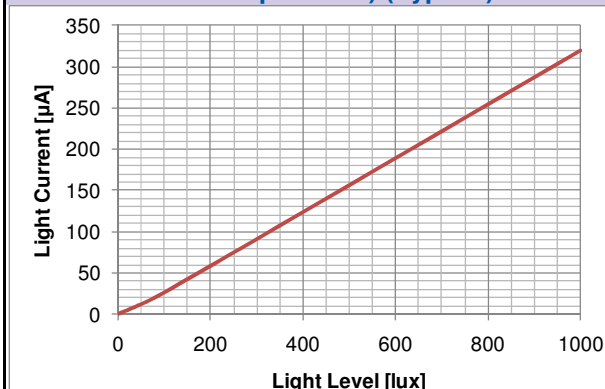
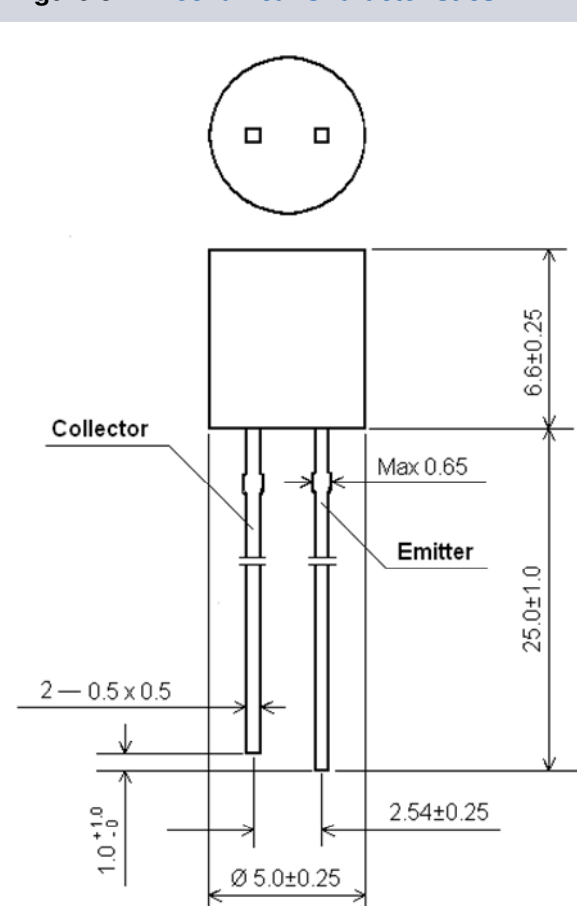
- Street light switching
- Interior and exterior light control (dusk/dawn switch)
- Automotive headlight dimmer
- Colorimeters
- Oil burner flame monitoring

Table 1 • Electro-Optical Characteristics @ 25 °C

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
I(10lux)	Light Current @ 10 lux	0.8	—	4.0	μA	Color Temp. 2850K V _{CE} = 5V
I(100lux) / I(10lux)	Slope I(100lux) / I(10lux)	10	—	14	—	Color Temp. 2850K V _{CE} = 5V
I _b	Dark Current	—	—	100	nA	V _{CE} = 10V
V _{BRCEO}	Collector-Emitter Breakdown Voltage	60	—	—	V	I _c = 100 μA
V _{BRECO}	Emitter-Collector Breakdown Voltage	5	—	—	V	I _E = 100 μA
t _{OFF}	Turn-off time to 0.1 μA	—	—	1	ms	From 10 lux to 0 lux
λ _{PK}	Peak spectral response	—	590	—	nm	—

Table 2 • Absolute Maximum Ratings

Symbol	Parameter	Min.	Typ.	Max.	Unit
T _{ST}	Storage Temperature	- 40	—	+ 85	°C
T _{OP}	Operating Temperature	- 40	—	+ 85	°C
P _{max}	Maximum Power Dissipation @ 25 °C	—	30	—	mW
I _{max}	Maximum Current	—	25	—	mA

Figure 1 • Relative Spectral Sensitivity @ 25 °C (Typical)**Figure 2 • Output vs Light Level (Color Temp. 2850K) (Typical)****Figure 3 • Mechanical Characteristics**

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