

# APDS-9004

## Miniature Surface-Mount Ambient Light Photo Sensor



### Data Sheet



#### Description

The APDS-9004 is a low cost analog-output ambient light photo sensor in miniature chipLED lead-free, reverse surface mount package. It consists of a photo sensor, whose spectral response is close to CIE standard photopic observer. Hence, it provides an excellent responsivity that is close to the response of human eyes, as shown in Figure 2. It is suitable for portable applications with its ultra small package design.

The APDS-9004 is ideal for applications in which the measurement of ambient light is used to control display backlighting. Mobile appliances such as the mobile phones and PDAs that draw heavy current from display backlighting will benefit from incorporating these photo sensor products in their designs by reducing power consumption significantly.

#### Features

- Spectral responsivity close to that of human eye
- ChipLED Reverse surface-mount package
  - Height – 1.10mm
  - Width – 3.20mm
  - Depth – 1.60mm
- Good output linearity across wide illumination range
- Low sensitivity variation across various light sources
- Operating temperature
  - 40°C to 85°C
- Vcc supply 2.4 to 5.5V
- Lead-free package, RoHS compliance.

#### Applications

- Detection of ambient light to control display backlighting
  - Mobile devices – Mobile phones, PDAs
  - Computing devices – Notebooks, Webpads
  - Consumer devices – TVs, Video Cameras, Digital Still Cameras
- Automatic Residential and Commercial Lighting Management
- Electronic Signs and Signals

**CAUTION:** It is advised that normal static precautions be taken in handling and assembly of this component to prevent damage and/or degradation which may be induced by ESD.

## Application Support Information

The Application Engineering Group is available to assist you with the application design associated with APDS-9004 ambient light photo sensor module. You can contact them through your local sales representatives for additional details.

## Ordering Information

Part Number	Packaging Type	Package	Quantity
APDS-9004-020	Tape and Reel	4-pins Chiplped package	2500

## Typical Application Circuit

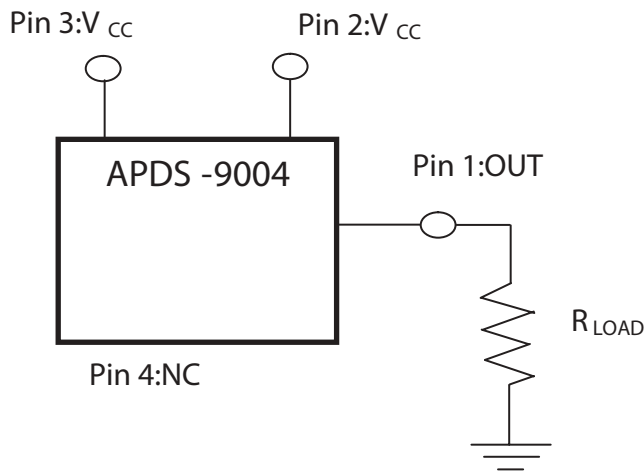


Figure 1. Typical application circuit for APDS-9004

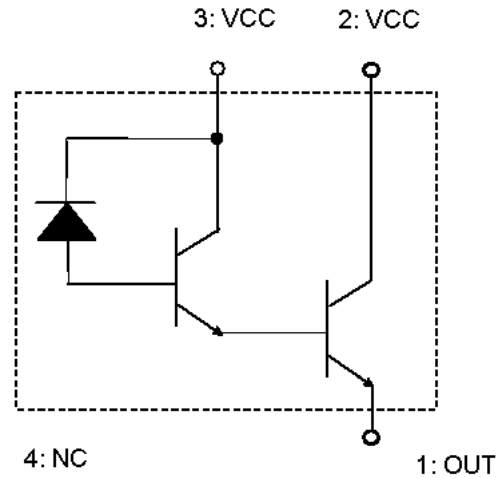
Figure 1 Table

Component	Recommended Application Circuit Component
$R_{LOAD}$	1k ohm

I/O Pins Configuration Table

Pin	Symbol	Description
1	OUT	OUT
2	VCC	VCC
3	VCC	VCC
4	NC	No Connect

## APDS-9004 Block Diagram



Notes : PIN 2 and PIN 3 Vcc need to be externally shorted.

Figure 2. Relative Spectral Response Vs. Wavelength

## Relative Spectral Response Vs. Wavelength

