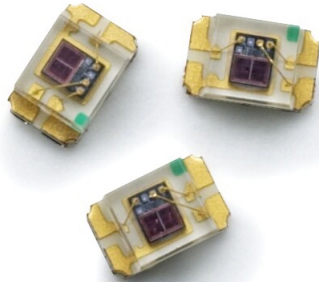


# Agilent APDS-9002 Miniature Surface-Mount Ambient Light Photo Sensor Data Sheet



## Description

The APDS-9002 is a low-cost analog-output ambient light photo sensor in lowest cost miniature chipLED lead-free surface mount package. It consists of a spectrally suited phototransistor, which peaks in human luminosity curve. Hence, it provides an excellent responsivity that is close to the response of human eyes, as shown in Figure 2. It provides a design-alternative to the HSDL-9000 digital-output ambient light photo sensor is

suitable for portable applications with its ultra small package design.

The APDS-9002 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

- **Excellent responsivity which peaks in the human luminosity curve**  
Close responsivity to the human eye
- **Miniature chipLED lead-free surface-mount package**  
Height – 0.80 mm  
Width – 2.00 mm  
Depth – 1.25 mm
- **Good output linearity across wide illumination range**
- **Low sensitivity variation across various light sources**
- **Guaranteed temperature performance**  
-40°C to 85°C
- **V<sub>CC</sub> supply 2.4 to 5.5 V**
- **Lead-free package**

## 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**
- **Daylight and artificial light exposed devices**



### Application Support Information

The Application Engineering Group is available to assist you with the application design associated with APDS-9002 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-9002-021	Tape and Reel	4-pins Chiplid package	2500

### Typical Application Circuit

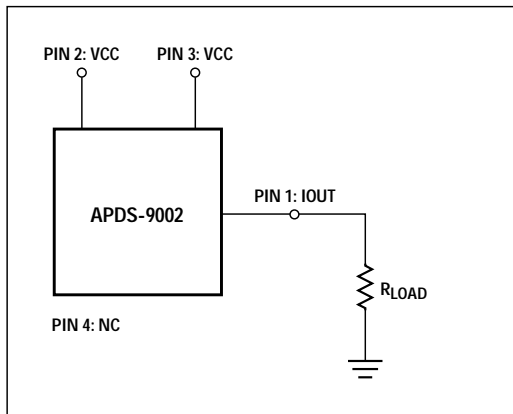


Figure 1. Typical application circuit for APDS-9002.

### Figure 1 Table

Component	Recommended Application Circuit Components
$R_{LOAD}$	1 k $\Omega$

### I/O Pins Configuration Table

Pin	Symbol	Description
1	IOUT	$I_{OUT}$
2	VCC	$V_{CC}$
3	VCC	$V_{CC}$
4	NC	No Connect