

DATASHEET

Ambient Light Sensor 5mm T-1 3/4 ALS-PDIC243-3C/F405

Features

- Excellent IR-Cut performance
- · Close responsively to the human eye spectrum
- · Light to Current, analog output
- Good output linearity across wide illumination range
- · Low sensitivity variation across various light sources
- Operation temperature performance, -40°C to 85°C
- · Wide supply voltage range, 1.8V to 5.5V
- Size: 5mm Lamp (Flat lens)
- · RoHS compliant package

Description

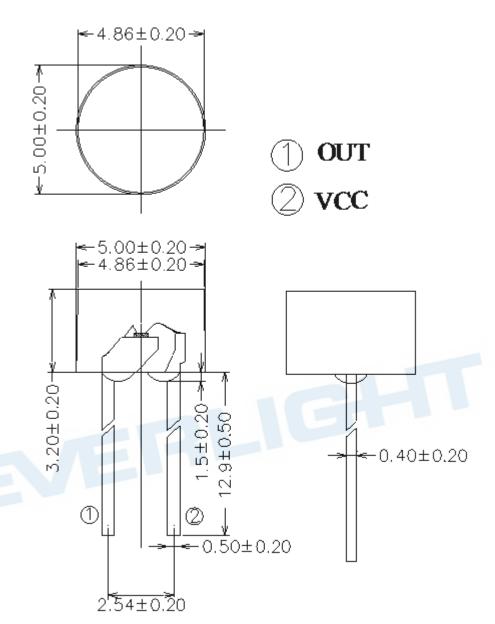
The ALS-PDIC243-3C/F405 is an ambient light sensor, which incorporates a photodiode and a current amplifier IC in DIP package. EVERLIGHT ALS series products are a good effective solution to the power saving of display backlighting of mobile appliances. Due to the high rejection ratio of infrared radiation, the spectral response of the ambient light sensor is close to human eyes. Also, it is very suitable to use ALS product for opto-switch application.

Applications

- Ambient light monitoring device for daylight and artificial light
 - CCD camera/CCTV security equipment, Street light
- Detection of ambient light to control display backlighting
 Computing device TFT LCD monitor for Notebook computer
 Consumer device TFT LCD TV, video camera, digital camera, toys



Package Dimensions



Notes:

- 1.All dimensions are in millimeters
- 2. Tolerances unless dimensions ±0.2mm



Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Supply Voltage	Vcc	-0.7~6.5	V
Operating Temperature Range	Topr	-40 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +100	°C
Soldering Temperature Range	T _{sol}	260	°C

Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol Min.		Max.	Unit
Operating Temperature	Topr	-40	+85	°C
Supply Voltage	Vcc	1.8	5.5	٧



Electrical and Optical Characteristics (Ta=25℃)

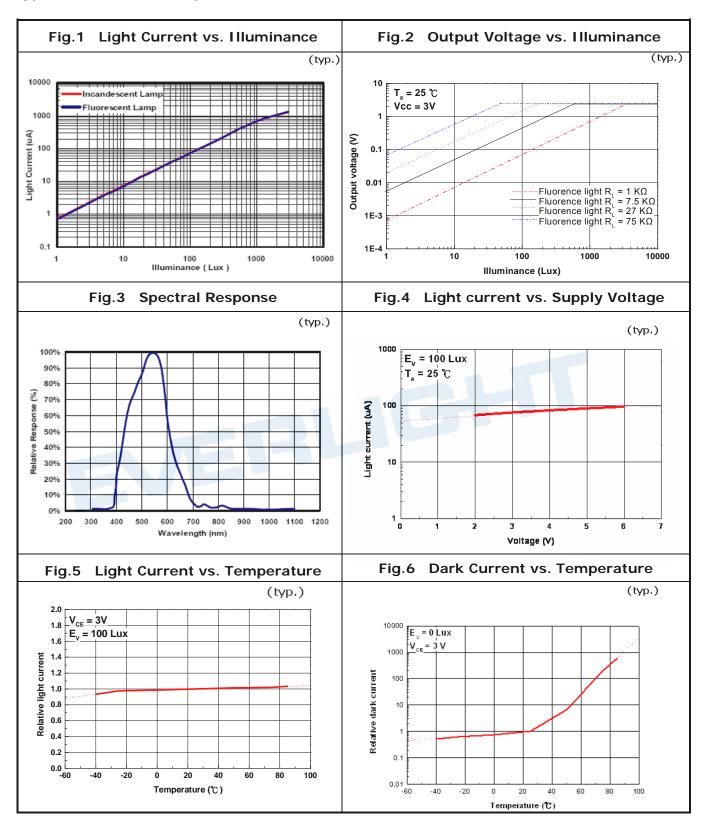
Parameter	Symbol	MIN	TYP	MAX.	Unit	Test Condition	
Dark Current	I _D	1		100	nA	V _{cc} =3V, E _v = 0Lux	
Light Current	I _{PH2}	24		48	uA	V _{CC} =3V, Ev= 100Lux [Note1]	
	I _{PH3}	240		480	uA	V _{CC} =3V, E _V = 1000Lux [Note1]	
	I _{PH4}		430		uA	V _{CC} =3V, E _V = 1000Lux [Note2]	
Photocurrent Ratio	I _{PH4} / I _{PH3}		1.2			V _{CC} =3V, E _V = 1000Lux	
Peak Sensitivity Wavelength	λ_{p}		560		nm		
Sensitivity Wavelength Range	λ	390		700	nm		
Rise time	tr		0.36		ms	V _{CC} = 3 V	
Fall time	tf	2	1.13		ms	$R_L = 27K\Omega$	
Angle of half Sensitivity	2θ _{1/2}		143		Deg.	I _F =20mA	

Note:

- 1. White Fluorescent light (Color Temperature = 6500K) is used as light source. However, White LED is substituted in mass production.
- 2. Illuminance by CIE standard illuminant-A / 2856K, incandescent lamp.

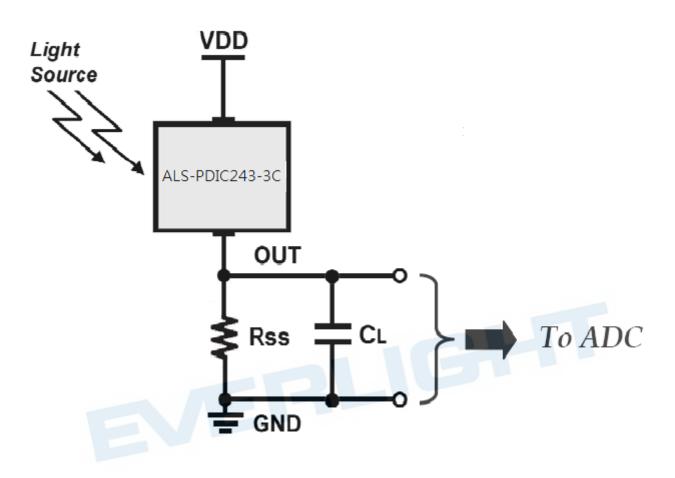


Typical Electrical and Optical Characteristics Curves





Converting Photocurrent to Voltage



Note:

- 1. The output voltage (Vout) is the product of photocurrent (IPH) and loading resistor (RL)
- 2. A right loading resistor shall be chosen to meet the requirement of maximum ambient light, and output saturation voltage:

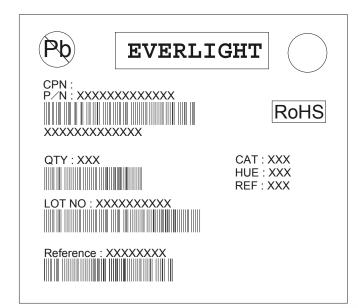
$$Vout(max.) = Iout(max.) \times RL \le Vout(saturation) = Vcc - 0.4V$$

Packing Quantity Specification



- 1.500PCS/1Bag, 5Bags/1Box
- 2.10Boxes/1Carton

Label Format



CPN: Customer's Production Number

P/N : Production Number QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

Note

- 1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
- 2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and instructions included in these specification sheets.
- 3. These specification sheets include materials protected under copyright of EVERLIGHT Corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.