DATASHEET

Ambient Light Sensor
5mm T-1 3/4
ALS-PDIC243-3B/L716

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, 2.0V to 5.5V
- Size: 5mm Lamp (Flat lens)
- The product itself will remain within RoHS compliant version
- Compliance with EU REACH
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)

Description

The ALS-PDIC243-3B/L716 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, such as the mobile phones, NB and PDAs. 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.

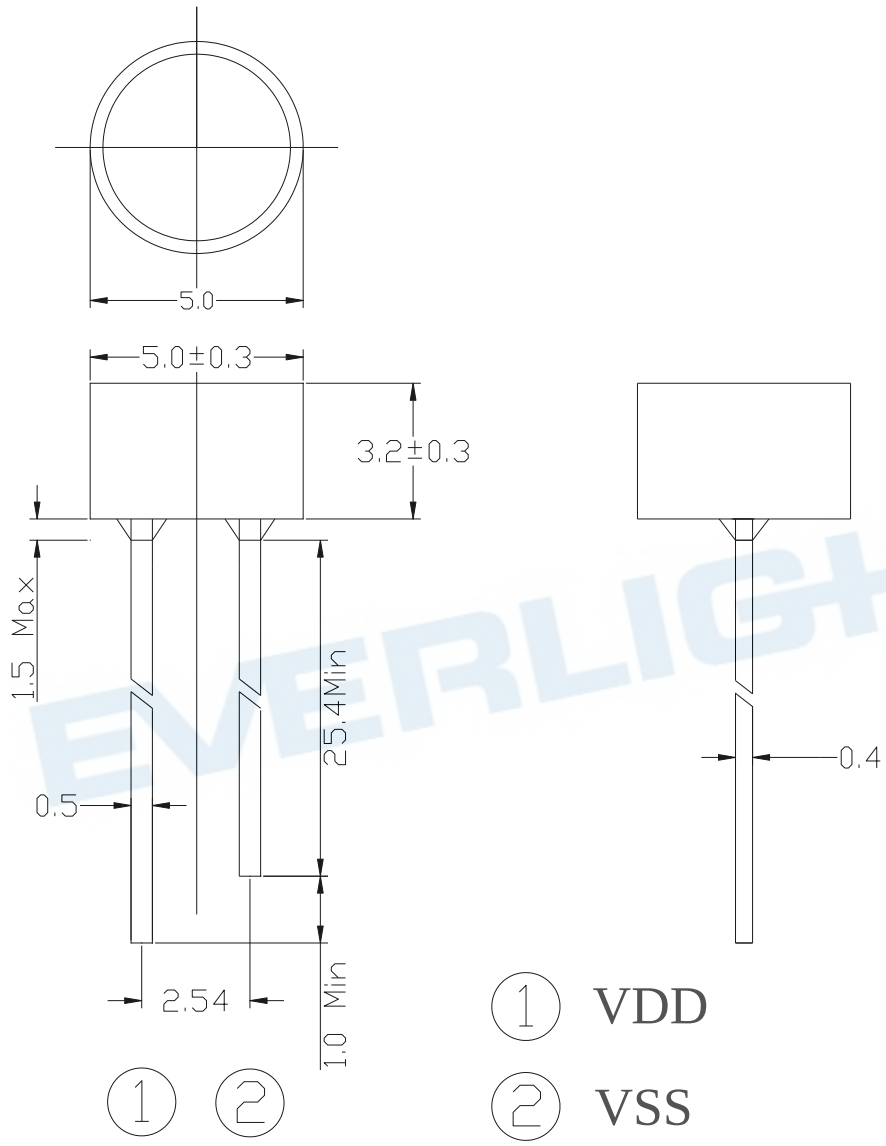
Applications

- 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

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3
Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

Package Dimensions



Notes:
1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.1mm

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3
Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{CC}	-0.3 ~ 6.0	V
Operating Temperature Range	T_a	-40 ~ +85	°C
Storage Temperature Range	T_S	-40 ~ +100	°C
Soldering Temperature	T_{SOL}	260	°C

Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Operating Temperature	T_a	-40	+85	°C
Supply Voltage	V_{CC}	2.0	5.5	V

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3

Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

Electrical and Optical Characteristics (T_a=25℃)

Parameter	Symbol	MIN	TYP	MAX.	Unit	Test Condition
Dark Current	I_D	---	---	50	nA	V_{CC}=5V, Ev= 0Lux
Photo Current	I_{PH1}	0.7	---	2.4	uA	V_{CC}=5V, Ev= 10Lux [Note1]
	I_{PH2}	7	---	24	uA	V_{CC}=5V, Ev= 100Lux [Note1]
	I_{PH3}	70	---	240	uA	V_{CC}=5V, Ev= 1000Lux [Note1]
Saturation Output Voltage	V_{O_RL}	---	3.86	---	V	Vcc=5V; Ev= 1000Lux, R_L=100 KΩ
Peak Sensitivity Wavelength	λ_p	---	560	---	nm	---
Sensitivity Wavelength Range	λ	390	---	700	nm	---
View Angle	$2\theta_{1/2}$	---	95	---	Deg.	---

Note:

1. White LED light (Color Temperature = 6500K) is used as light source.

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3

Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

Typical Electrical and Optical Characteristics Curves

Fig.1 Photocurrent vs. Illuminance

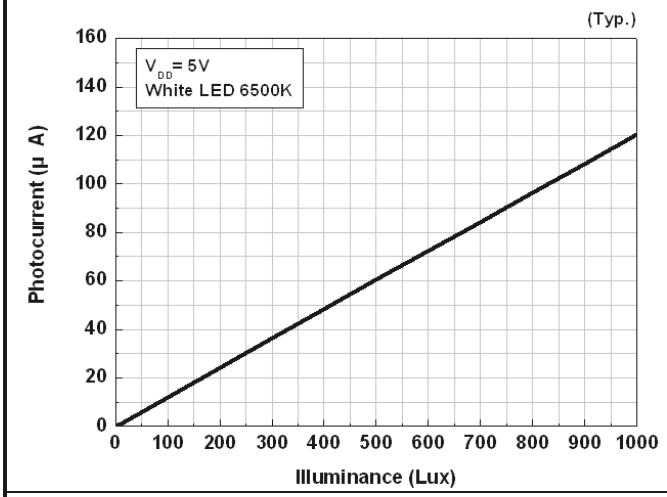


Fig.2 Dark Current vs. Ambient Temperature

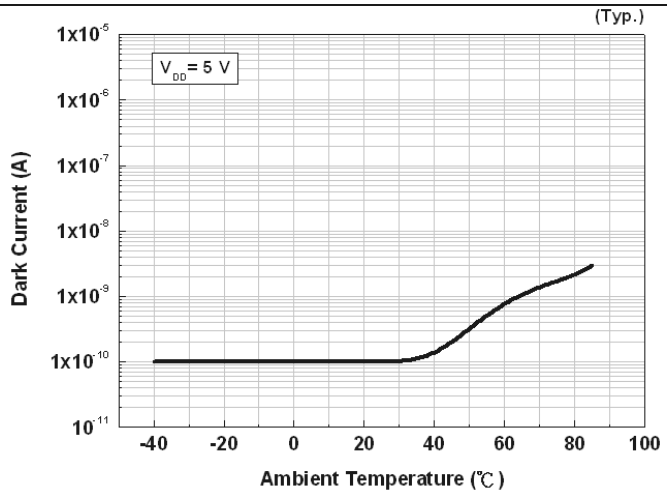


Fig.3 Relative Photocurrent vs. Temperature

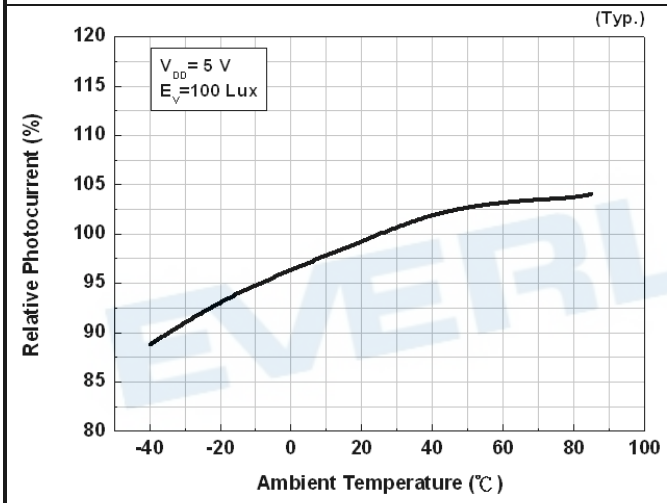


Fig.4 Photocurrent vs. Supply Voltage

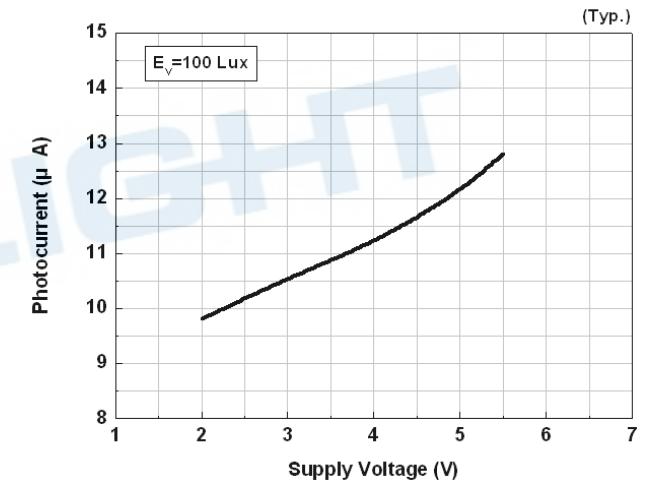


Fig.5 Spectral Response

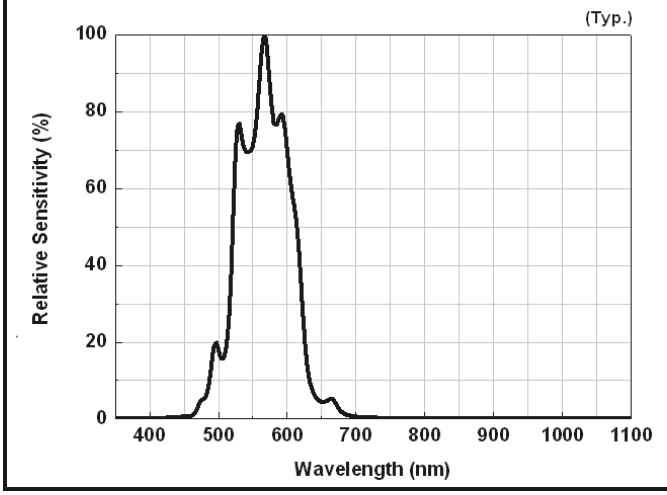
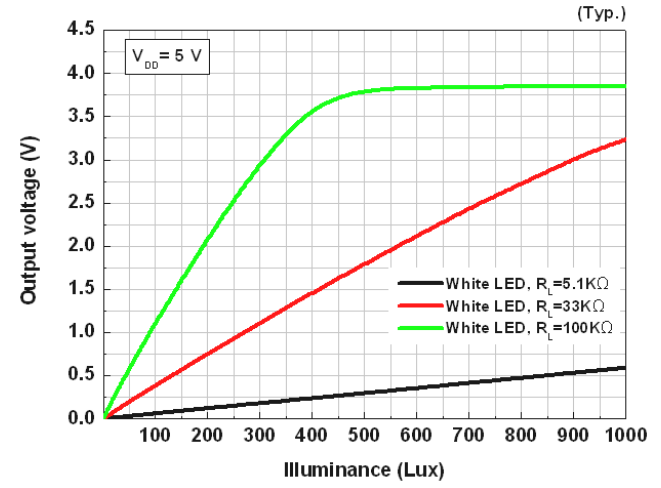


Fig.6 Output Voltage vs. Illuminance



Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3
Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

Fig.7 View Angle (X axis)

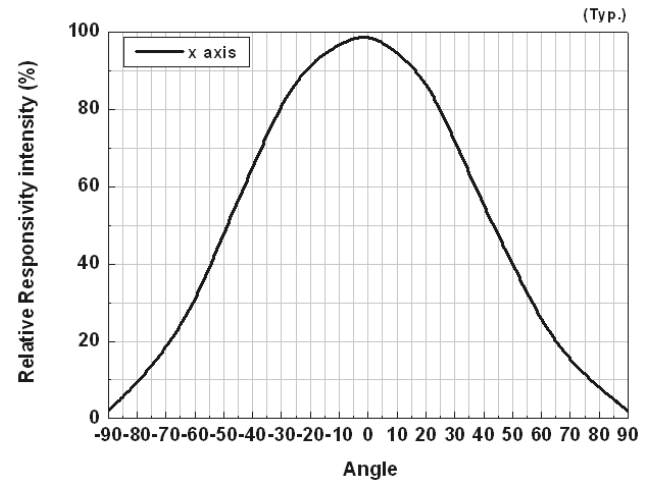
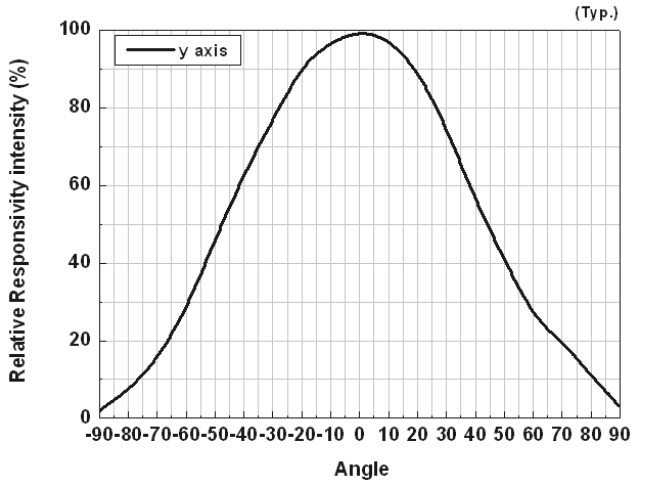


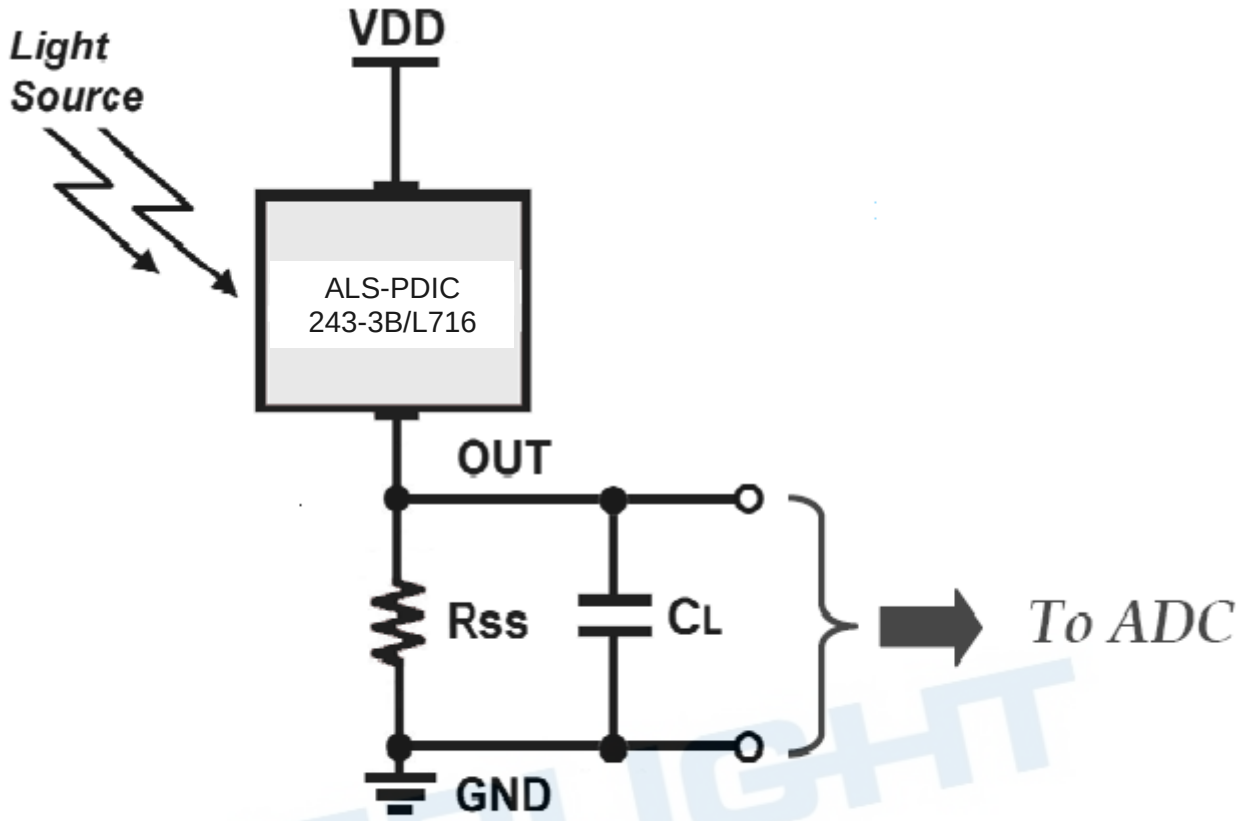
Fig.8 View Angle (y axis)



EVERLIGHT

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3
Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

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:

$$V_{OUT\_amb\_max} = I_{OUT\_amb\_max}{}^{(*)} \times R_L \leqq V_{OUT}\ (\text{saturation})$$

(*) For $I_{OUT\_amb\_max}$, please refer to Fig.1.

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3
Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

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

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3
Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)

DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. 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 the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
5. These specification sheets include materials protected under copyright of EVERLIGHT. Reproduction in any form is prohibited without obtaining EVERLIGHT's prior consent.
6. This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized Everlight sales agent for special application request.

Copyright © 2012, Everlight All Rights Reserved. Release Date : 11.07.2018. Issue No: DLS-0000186 Rev.3

Ver.:3 Release Date:11/12/2018 狀態:Approved(正式發行)