DATASHEET

Ambient Light Sensor – DIP 3mm T-1
ALS-PDIC204-6C/H88/L378/TR1-4

Features

- 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: 3mm Lamp (Curved lens)
- RoHS compliant and Pb free package
- Compliance with EU REACH

Description

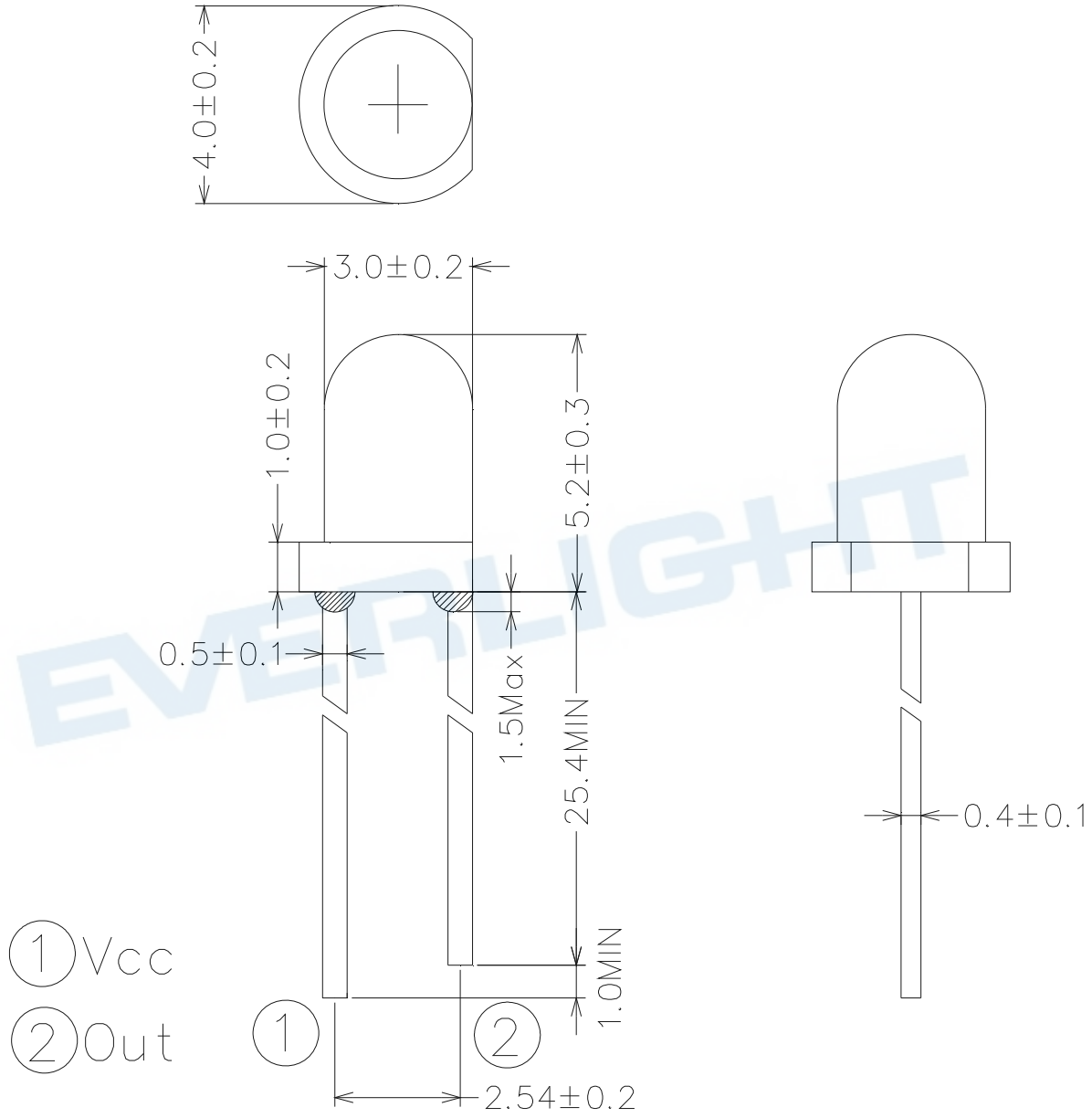
The ALS-PDIC204-6C/H88/L378/TR1-4 is an ambient light sensor, which incorporates a photodiode and a current amplifier IC in DIP package. EVERLIGHT ALS series products are a good effective solution to the power saving of display backlighting of mobile appliances, such as the mobile phones, NB and PDAs. Due to the high rejection ratio of infrared radiation, the spectral response of the ambient light sensor is close to human eyes.

Applications

- Detection of ambient light to control display backlighting
  Mobile devices – Mobile phones, PDAs
  Computing device – TFT LCD monitor for Notebook computer
  Consumer device – TFT LCD TV, Video camera, Digital camera, Toys

- Automatic residential and commercial management
- Automatic contrast enhancement for electronic signboard
- Ambient light monitoring device for daylight and artificial light
  – Street light, CCD/CCTV

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.25mm

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{CC}	-0.7 ~ 6.5	V
Operating Temperature Range	T_{opr}	-40 ~ +80	°C
Storage Temperature Range	T_{stg}	-40 ~ +100	°C
Soldering Temperature Range	T_{sol}	260	°C

Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Operating Temperature	T_{opr}	-40	+80	°C
Supply Voltage	V_{CC}	1.8	5.5	V

Electrical and Optical Characteristics (T_a=25℃)

Parameter	Symbol	MIN	TYP	MAX.	Unit	Test Condition
Dark Current	I_D	0.1	--	60	nA	V_{CC}=5V, Ev= 0Lux
Light Current	I_{PH1}	5	--	30	uA	V_{CC}=5V, Ev= 10 Lux [Note1]
	I_{PH2}	50	--	300	uA	V_{CC}=5V, Ev= 100 Lux [Note1]
	I_{PH3}	500	--	3000	uA	V_{CC}=5V, Ev= 1000 Lux [Note1]
Peak Sensitivity Wavelength	λ_p	---	540	---	nm	---
Sensitivity Wavelength Range	λ	390	---	700	nm	---
Rise time	tr	---	0.36	---	ms	V_{CC}=3V R_L = 27KΩ
Fall time	tf	---	1.13	---	ms	

Note:

1. White Fluorescent light (Color Temperature = 6500K) is used as light source. However, White LED is substituted in mass production.

Typical Electro-Optical Characteristics Curves

Fig.1 Light Current vs. illuminance

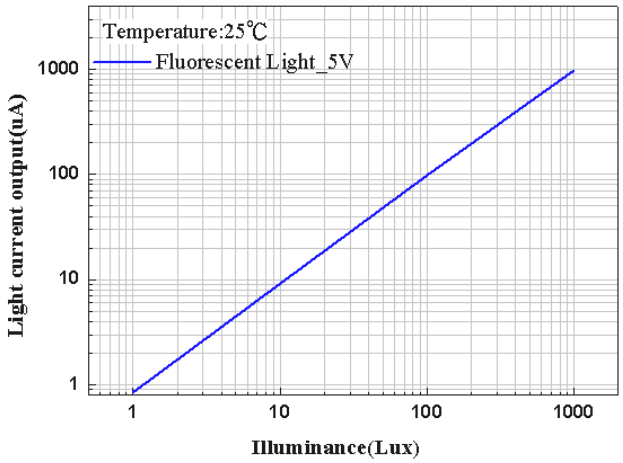


Fig.2 Output Voltage vs. illuminance

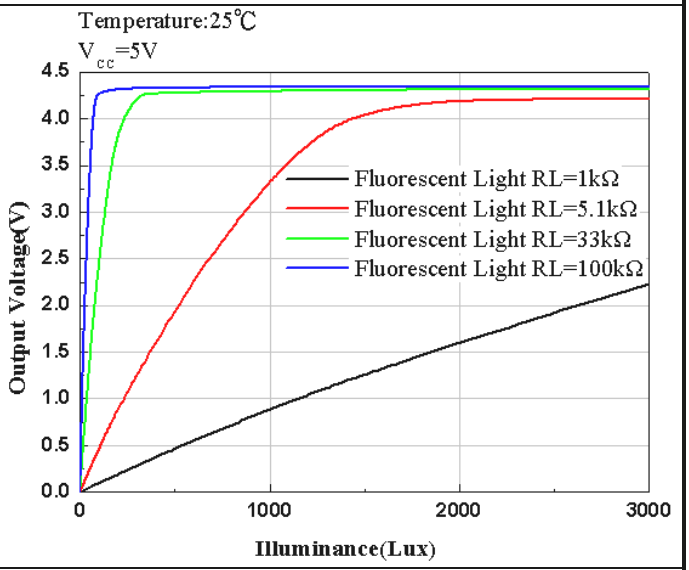


Fig.3 Spectral Response

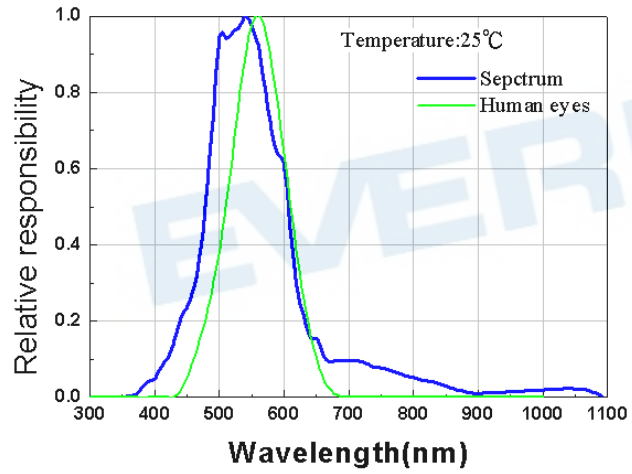


Fig.4 Light current vs. Supply Voltage

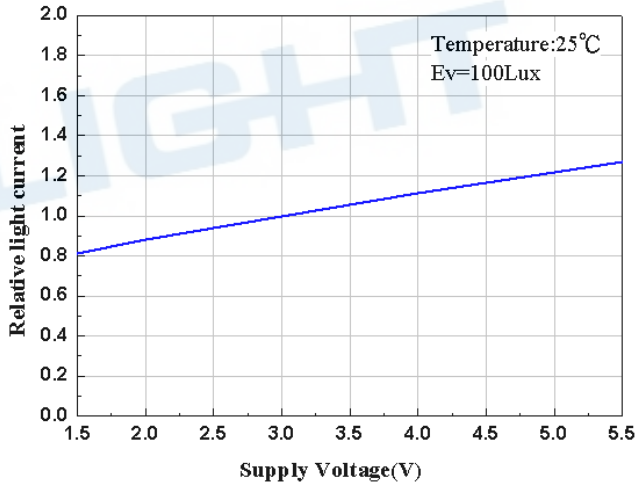


Fig.5 Light Current vs. Temperature

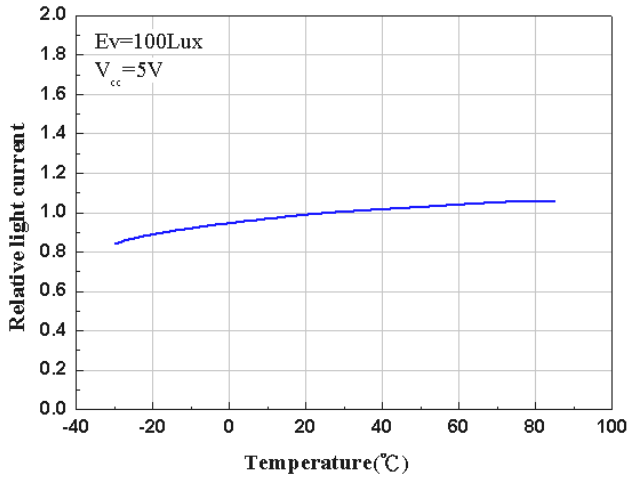
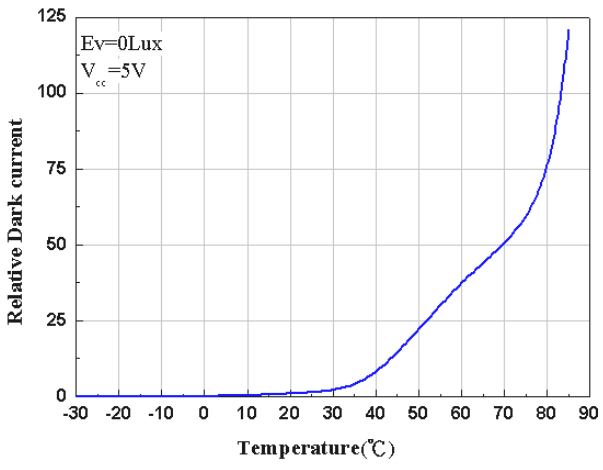
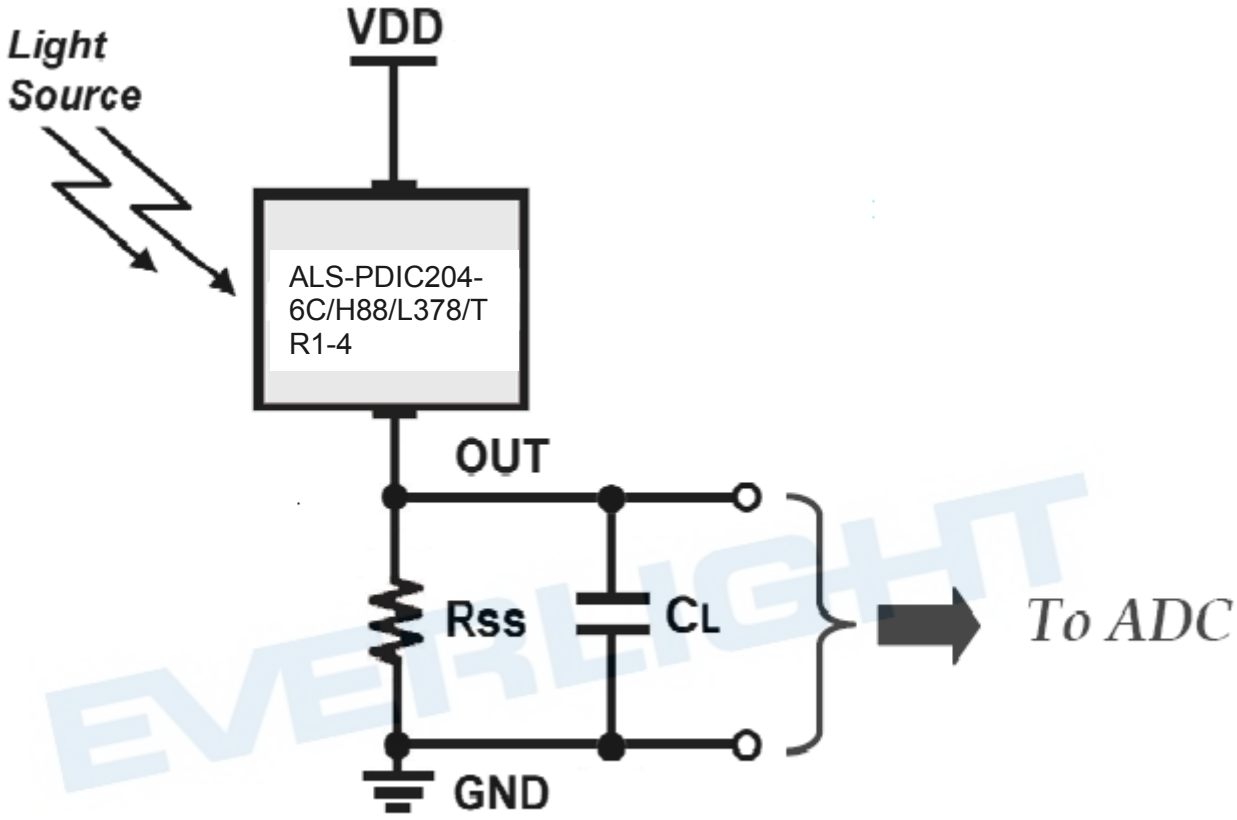


Fig.6 Dark Current vs. Temperature



Converting Photocurrent to Voltage

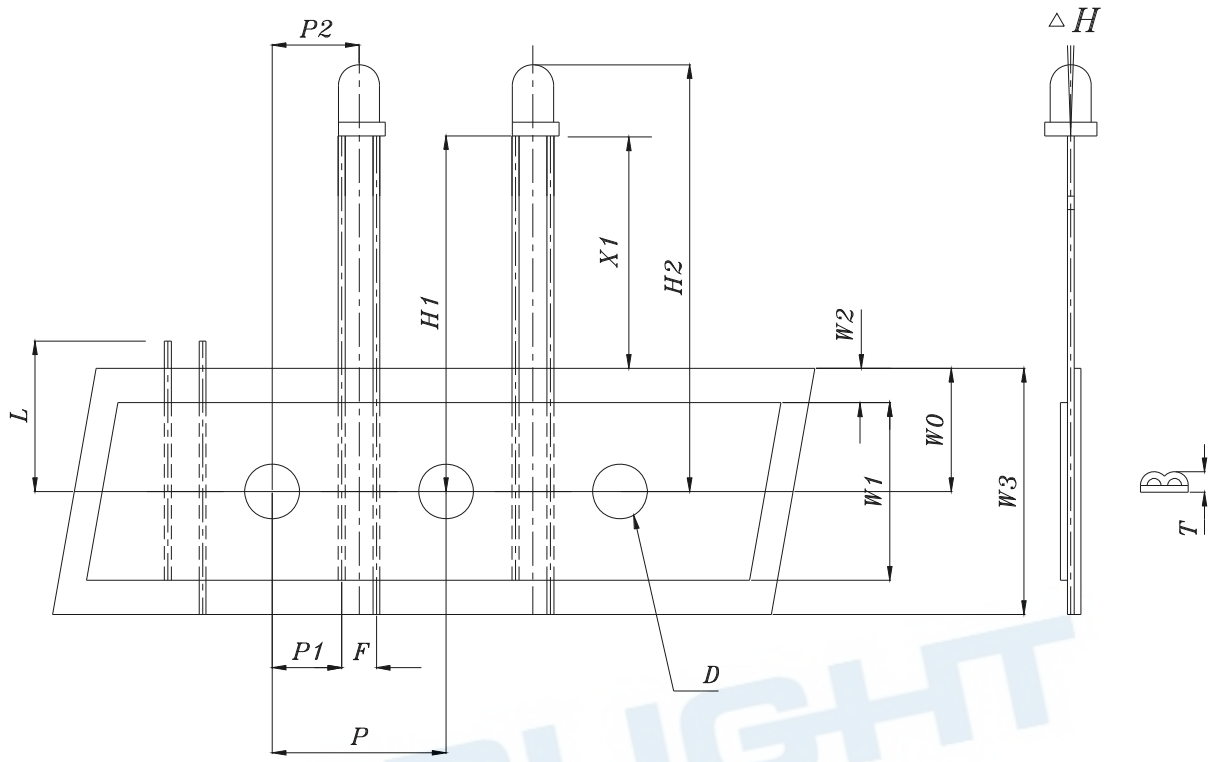


Note:

1. The output voltage (V_{out}) is the product of photocurrent (I_{PH}) and loading resistor (R_L)
2. A right loading resistor shall be chosen to meet the requirement of maximum ambient light, and output saturation voltage:

$$V_{out(max.)} = I_{out(max.)} \times R_L \leqq V_{out(saturation)} = V_{cc} - 0.7V$$

Taping Dimensions



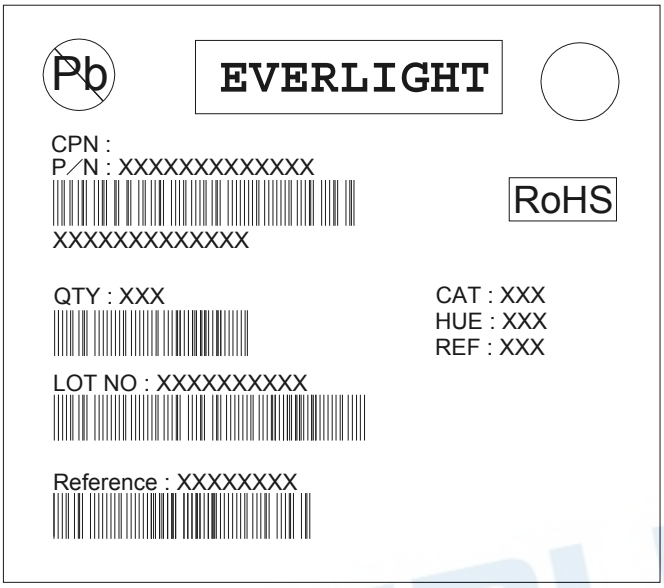
Taping Sizes

Symbol Item	Symbol	Specifications		
		Avg		Tolerance
		mm	Inch	mm
Tape Feed Hold Diameter	D	4.0	0.157	±0.2
Component Lead Pitch	F	2.54	0.1	+0.8/-0.2
Front-To-Rear Deflection	△H	0°	0	±5°
Feed Hole To Button Of Component	H1	22.4	0.882	±1.0
Feed Hole To Overall Component Height	H2	27.6	1.087	±1.0
Lead Length After Component Height	L	11.0	0.433	Max
Feed Hold Pitch	P	12.7	0.500	±0.3
Lead Location	P1	5.08	0.200	±0.7
Center Of Component Location	P2	6.35	0.250	±1.2
Overall Taped Package Thickness	T	1.42	0.056	Max
Feed Hold Location	W0	9.0	0.354	±0.5
Adhesive Tape Width	W1	13.0	0.512	±0.5
Adhesive Tape Position	W2	2.0	0.079	Max
Tape Width	W3	18.0	0.709	±0.75

Packing Quantity Specification

1.1000PCS/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

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.

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