



4.8mm Semi-Lens Silicon PIN Photodiode

MODEL NO : PD438C/S46

■ Features :

- Fast response times
- High photo sensitivity
- Small junction capacitance

■ Description :

PD438C/S46 is a high speed and sensitive PIN photodiode in a flat side view plastic Package. Due to its water clear epoxy the device is sensitive to visible and infrared radiation.

■ Applications :

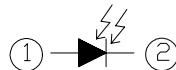
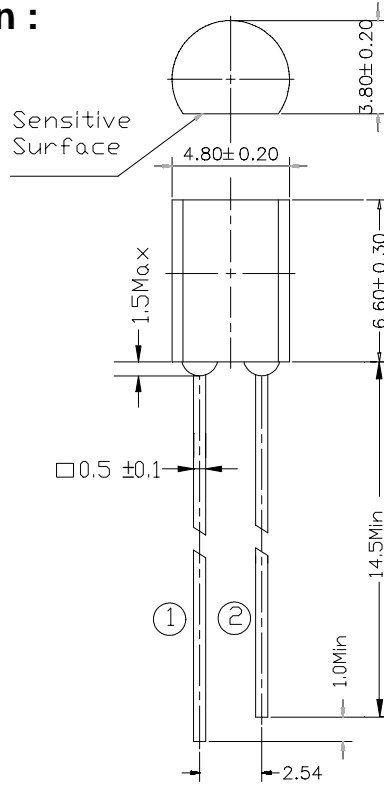
- High speed photo detector
- Cameras
- Infrared remote controllers for TVs, VCRs, audio equipment, air conditioners, etc.

PART NO.	CHIP	LENS COLOR
	MATERIAL	
PD	Silicon	Water Clear

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■ **Package Dimension :**



① Anode
 ② Cathode

■ **Notes :**

1. All dimensions are in millimeter.
2. Lead spacing is measured where the lead emerge from the package.
3. Protruded resin under flange 1.5 mm Max.
4. Lens color : Water clear.
5. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
6. 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.
7. When using this product , please observe the absolute maximum ratings and the instructions for use 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 the instructions included in these specification sheets.



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■ Absolute Maximum Ratings at T_A = 25°C

Parameter	Symbol	Rating	Unit	Notice
Reversr Voltage	V _R	32	V	
Operating Temperature	Topr	-25 ~ +85	°C	
Storage Temperature	Tstg	-40 ~ +85	°C	
Lead Soldering Temperature	Tsol	260	°C	
Power Dissipation at(or below) 25°C Free Air Temperature	Pc	150	mW	

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang of Spectral Bandwidth	$\lambda_{0.5}$	----	400-1200	----	nm	----
Wavelength of Peak Sensitivity	λ_p	----	980	----	nm	----
Open-Circuit Voltage	V _{OC}	----	0.35	----	V	E _e =5mW/cm ² λ_p =940nm
Short-Circuit Current	I _{SC}	----	250	----	μ A	
Reverse Light Current	I _L	----	270	----	μ A	E _e =5mW/cm ² λ_p =940nm V _R =5V
Dark Current	I _D	----	5	30	nA	E _e =0mW/cm ² V _R =10V
Reverse Breakdown Voltage	B _{VR}	32	170	----	V	E _e =0mW/cm ² I _R =100 μ A
Total Capacitance	C _t	----	25	----	pF	E _e =0mW/cm ² f=1MHZ V _R =3V
Turn-on/Turn-off Time	t _{on} /t _{off}	----	50/50	----	nS	R _L =1000 Ω V _R =10V

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Typical Electrical/Optical/Characteristics Curves :

Fig. 1 Power Dissipation vs. Ambient Temperature

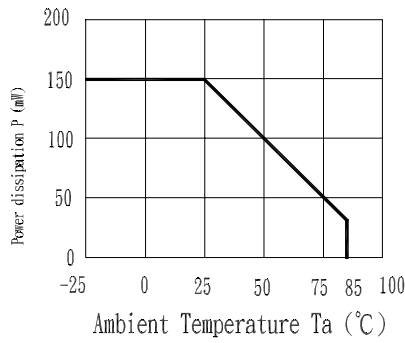


Fig.2 Spectral Sensitivity

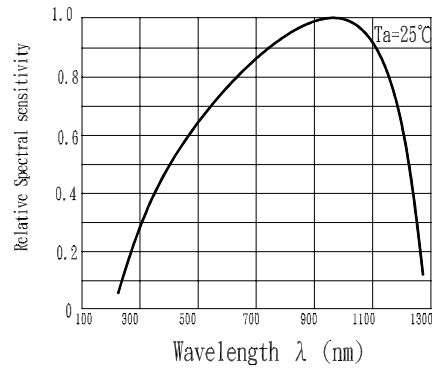


Fig.3 Dark Current vs. Ambient Temperature

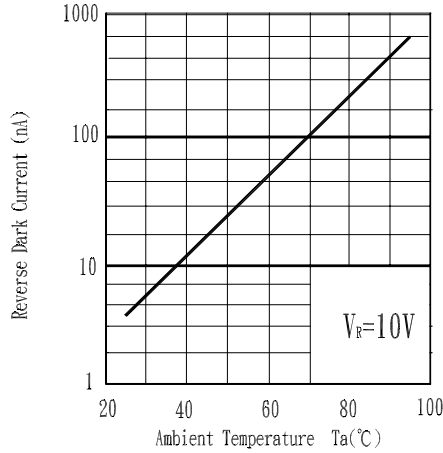


Fig.4 Reverse Light Current vs. Ee

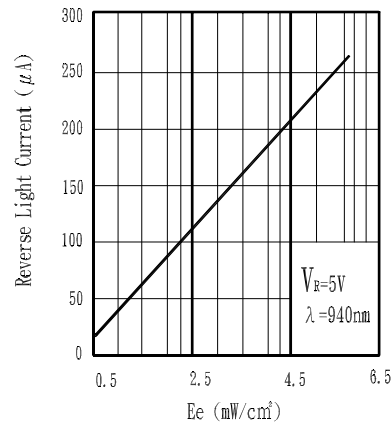


Fig.5 Terminal Capacitance vs. Reverse Voltage

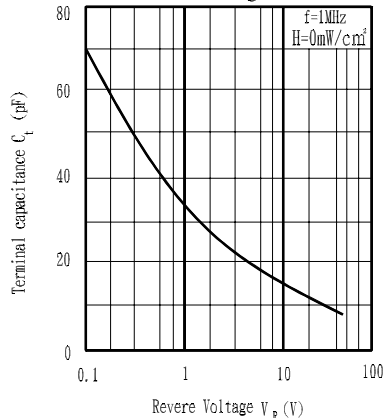
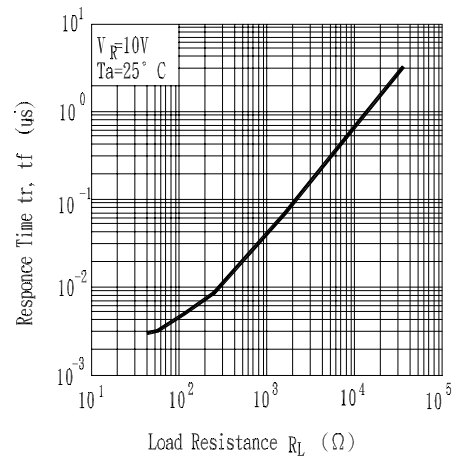


Fig.6 Responce Time vs. Load Resistance





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Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.

Confidence level:90%

LTPD:10%

NO.	Item	Test Conditions	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 sec	22 PCs	$I_L \leq L \times 0.8$ L:Lower specification limit	0/1
2	Temperature Cycle	H : +85°C 30 min ↑ 5 min ↓ L : -55°C 30 min	50 cycle	22 PCs		0/1
3	Thermal Shock	H : +100°C 5 min ↑ 10 sec ↓ L : -10°C 30 min	50 cycle	22 PCs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 PCs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 hrs	22 PCs		0/1
6	DC Operating Life	$V_R=5V$	1000 hrs	22 PCs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 PCs		0/1

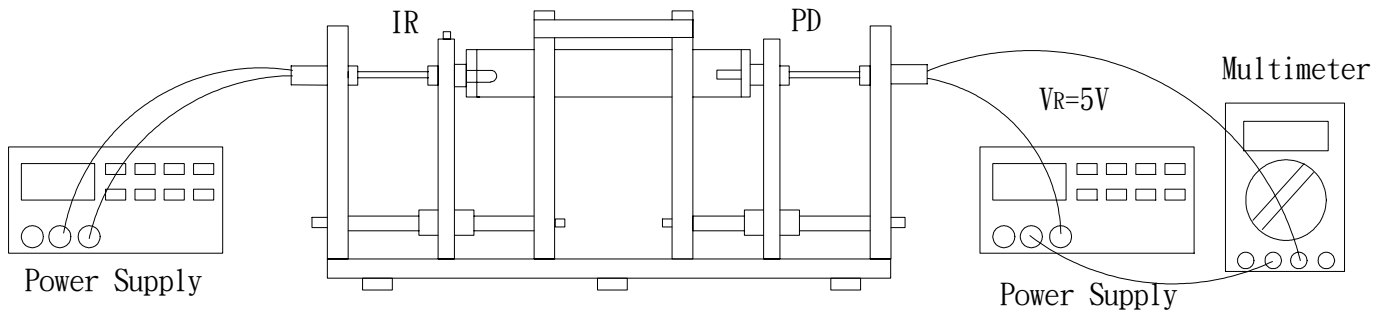
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■ Test Method For Reverse Light Current

Condition: $E_e=5\text{mW}/\text{cm}^2, V_R=5\text{V}$

Test Item: Reverse Light Current (Unit: μA)

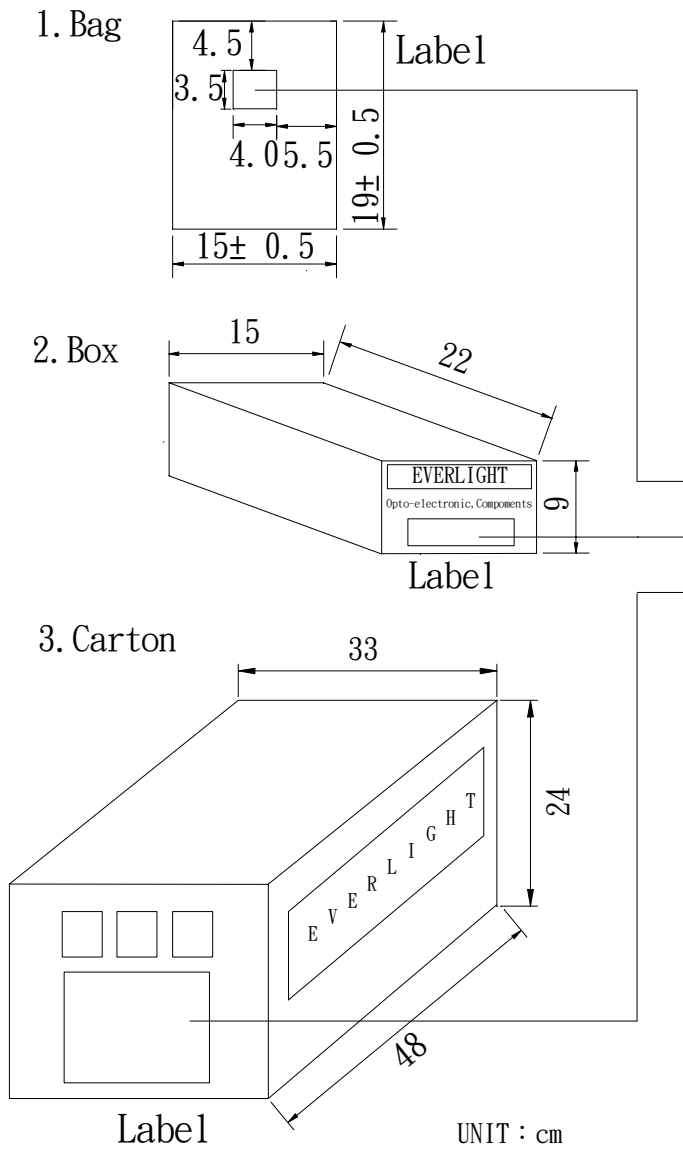




4.8mm Semi-Lens Silicon PIN Photodiode

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■ **Packing Specifications**



CPN:

P/N:



PD438C/S46

QTY:

CAT:

HUE:

REF:



LOT NO:

MADE IN TAIWAN

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

■ **Packing Quantity Specification**

1. 500 Pcs/1Bag , 10 Bags/1Box

2. 10 Boxes/1Carton