



DEVICE NUMBER : DPD-063-007      REV : 2.3  
ECN : \_\_\_\_\_      PAGE : 1/7

## 2.75 x 5.25mm Silicon PIN Photodiode

MODEL NO : \_\_\_\_\_ PD638B \_\_\_\_\_

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### ■ Features :

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

### ■ Description :

- PD638B is a high speed and sensitive PIN photodiode in a flat side view plastic package. The epoxy package itself is an IR filter, spectrally matched to GaAs or GaAlAs IR emitter.

### ■ Applications :

- High speed photo detector
- Camera
- Infrared remote controller for TVs VCR, audio equipment, air conditioner, etc.

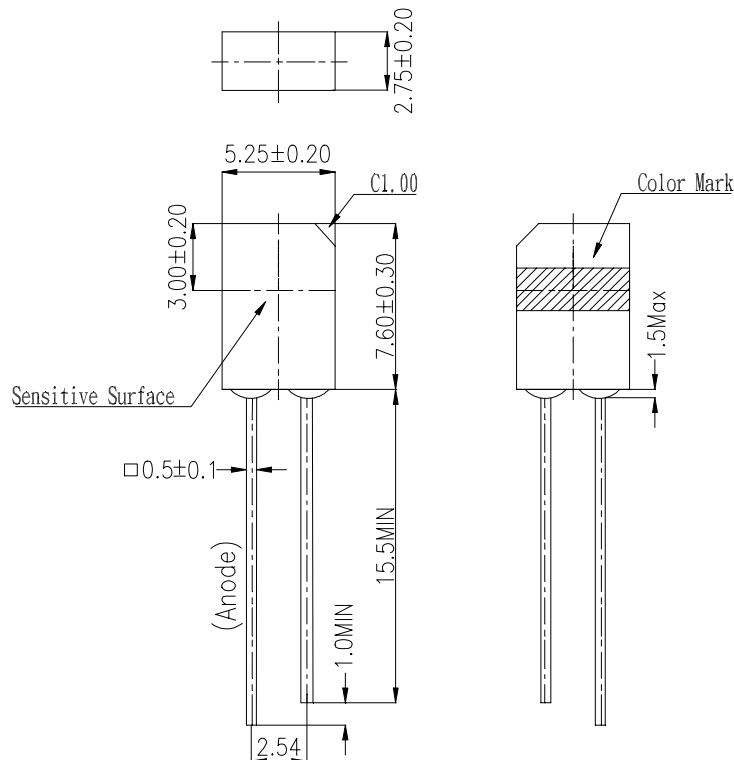
PART NO.	CHIP	LENS COLOR
	MATERIAL	
PD	Silicon	Black

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**2.75 x 5.25mm Silicon PIN Photodiode**

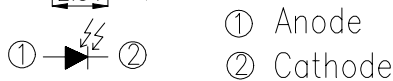
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**Package Dimensions:**



**Notes :**

1. All dimensions are in millimeter.
2. Protruded resin under flange 1.5 mm Max.
3. Lead spacing is measured where the lead emerge from the package.
4. Lens color : Black.
5. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
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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<sub>A</sub> = 25°C

Parameter	Symbol	Rating	Unit	Notice
Reverse Voltage	V <sub>R</sub>	32	V	
Power Dissipation	P <sub>d</sub>	150	mW	
Lead Soldering Temperature	T <sub>sol</sub>	260	°C	4mm from mold body less than 5 seconds
Operating Temperature	T <sub>opr</sub>	-25 ~ +85	°C	
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	°C	

### ■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang of Spectral Bandwidth	$\lambda_{0.5}$	----	840---1200	----	nm	----
Wavelength of Peak Sensitivity	$\lambda_p$	----	980	----	nm	----
Open-Circuit Voltage	V <sub>OC</sub>	----	0.35	----	V	E <sub>e</sub> =5mW/cm <sup>2</sup> $\lambda_p$ =940nm
Short-Circuit Current	I <sub>SC</sub>	----	80	----	$\mu$ A	
Reverse Light Current	I <sub>L</sub>	----	80	----	$\mu$ A	E <sub>e</sub> =5mW/cm <sup>2</sup> $\lambda_p$ =940nm V <sub>R</sub> =5V
Dark Current	I <sub>D</sub>	----	5	30	nA	E <sub>e</sub> =0mW/cm <sup>2</sup> V <sub>R</sub> =10V
Reverse Breakdown Voltage	B <sub>VR</sub>	32	170	----	V	E <sub>e</sub> =0mW/cm <sup>2</sup> I <sub>R</sub> =100 $\mu$ A
Total Capacitance	C <sub>t</sub>	----	25	----	pF	E <sub>e</sub> =0mW/cm <sup>2</sup> f=1MHZ V <sub>R</sub> =3V
Rise/Fall Time	t <sub>r</sub> /t <sub>f</sub>	----	50/50	----	nS	R <sub>L</sub> =1000 $\Omega$ V <sub>R</sub> =10V



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#### ■ Typical Electrical/Optical/Characteristics Curves

Fig. 1 Power Dissipation vs. Ambient Temperature

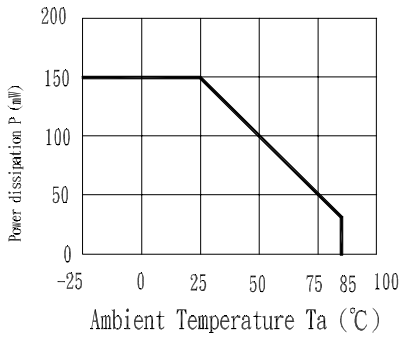


Fig. 2 Spectral Sensitivity

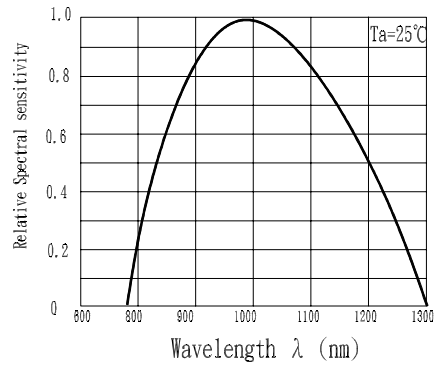


Fig. 3 Dark Current vs. Ambient Temperature

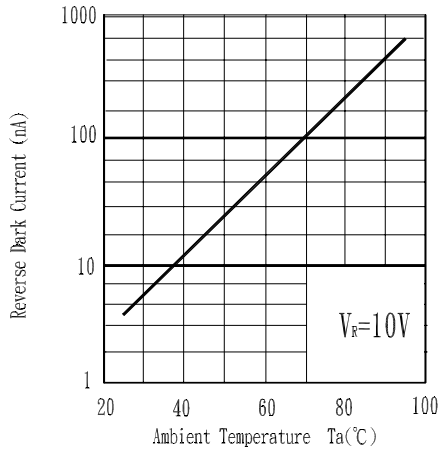


Fig. 4 Reverse Light Current vs.  $E_e$

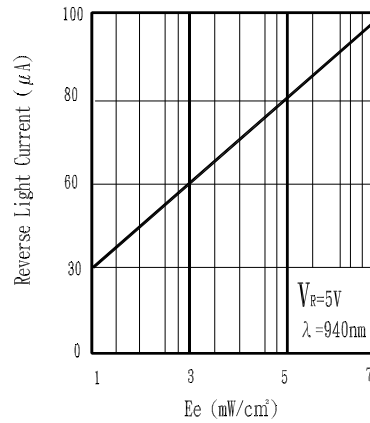


Fig. 5 Terminal Capacitance vs. Reverse Voltage

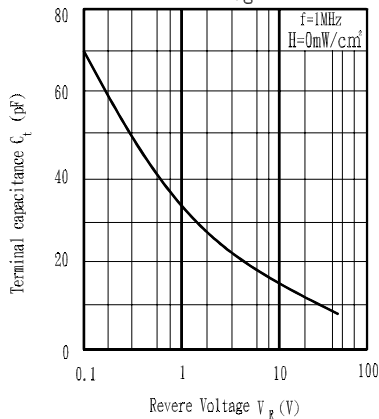
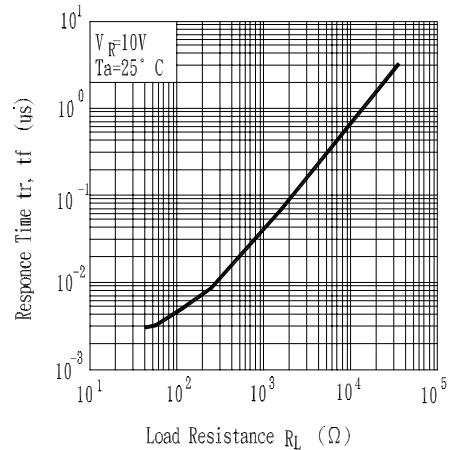


Fig. 6 Response Time vs. Load Resistance





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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/ Cycles	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 secs	22 pcs	$I_L \leq L_x \times 0.8$  L :Lower specification limit	0/1
2	Temperature Cycle	H : +85°C    30 mins ↑ 5 mins ↓ L : -55°C    30 mins	50 cycles	22 pcs		0/1
3	Thermal Shock	H : +100°C    5 mins ↑ 10 secs ↓ L : -10°C    5 mins	50 cycles	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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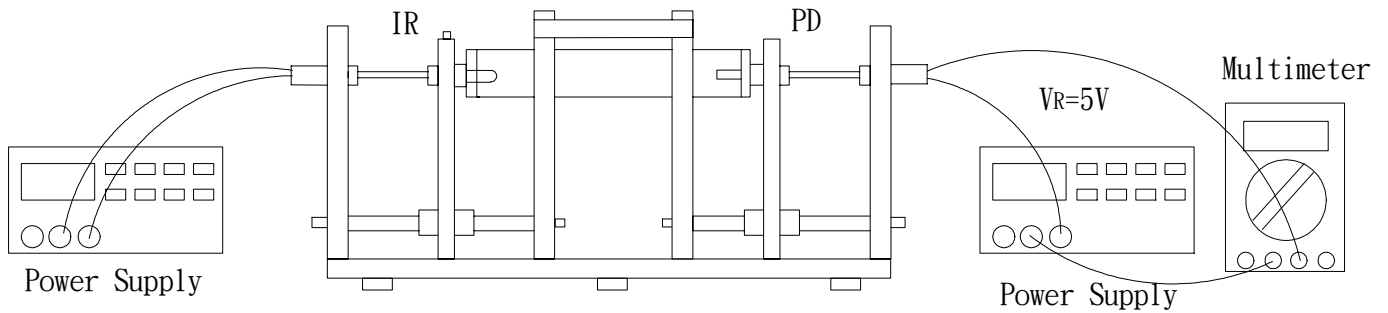
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#### ■ Test Method For Reverse Light Current

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

Test Item: Reverse Light Current)

Unit :  $\mu\text{A}$

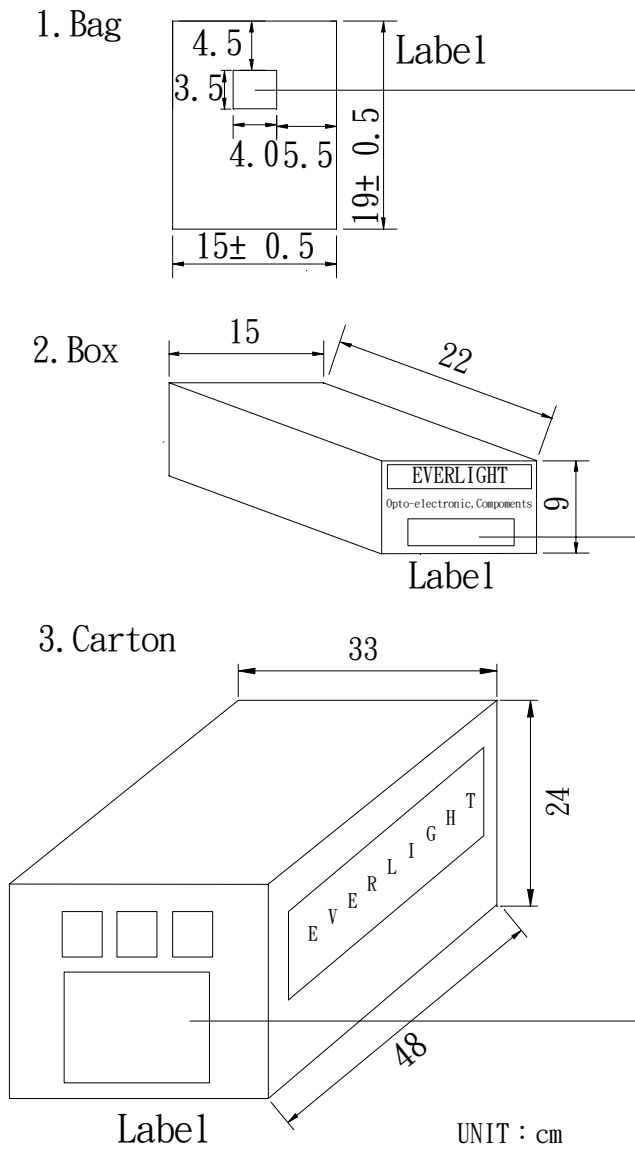




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■ Packing Specifications



EVERLIGHT

CPN:  
P/N:  
  
PD638B

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