



# EVERLIGHT ELECTRONICS CO., LTD.

DEVICE NUMBER : DPD-152-013      REV : 1.2  
ECN : \_\_\_\_\_      PAGE : 1/7

## 1206 Package Silicon PIN Photodiode

MODEL NO : PD15-22C

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### ■ Features :

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

### ■ Description :

- PD15-22C is a high speed and high sensitive PIN photodiode in miniature flat top view lens SMD package and it is molded in a water clear plastic. The device is spectrally matched with the infrared emitting diode.

### ■ Applications :

- High speed photo detector
- Copier
- Optoelectronic switch
- Game machine

PART NO.	CHIP	LENS COLOR
	MATERIAL	
PD	Silicon	Water clear

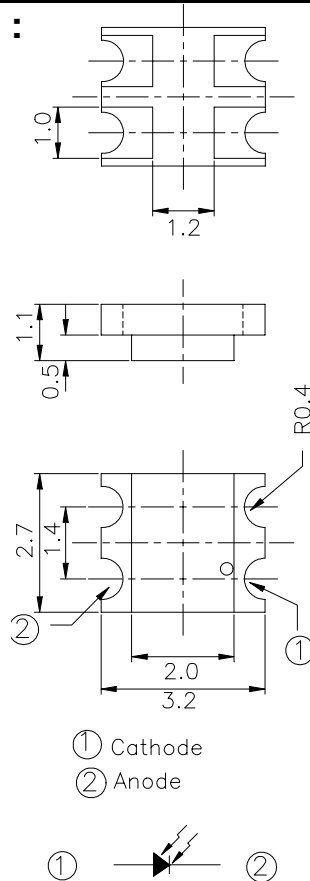
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MODEL NO : PD15-22C

### ■ Package Dimensions :



### ■ Notes :

1. All dimensions are in millimeter.
2. General Tolerance:  $\pm 0.1\text{mm}$
3. Lens color : Water clear.
4. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
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6. 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
Reversr Voltage	V <sub>R</sub>	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	$\lambda_p$	----	980	----	nm	----
Open-Circuit Voltage	V <sub>OC</sub>	----	0.41	----	V	E <sub>e</sub> =5mW/cm <sup>2</sup> λ p=940nm
Short-Circuit Current	I <sub>SC</sub>	----	35	----	μA	
Reverse Light Current	I <sub>L</sub>	----	35	----	μA	E <sub>e</sub> =5mW/cm <sup>2</sup> λ p=940nm V <sub>R</sub> =5V
Dark Current	I <sub>D</sub>	----	----	10	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 μA
Total Capacitance	C <sub>t</sub>	----	6	----	pF	E <sub>e</sub> =0mW/cm <sup>2</sup> f=1MHZ V <sub>R</sub> =5V
Turn-on/Turn-off Time	t <sub>on</sub> /t <sub>off</sub>	----	10/10	----	nS	R <sub>L</sub> =1000Ω V <sub>R</sub> =10V



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

Fig. 1 Power Dissipation vs. Ambient Temperature

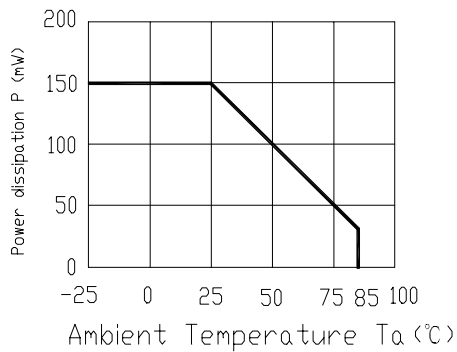


Fig.2 Spectral Sensitivity

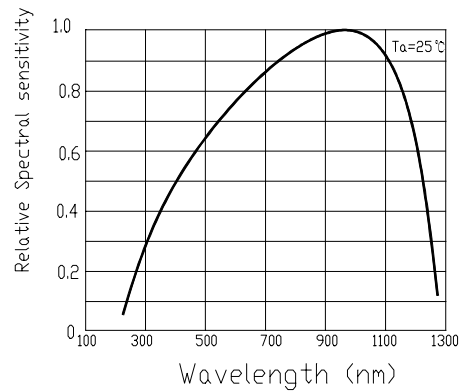


Fig.3 Dark Current vs. Ambient Temperature

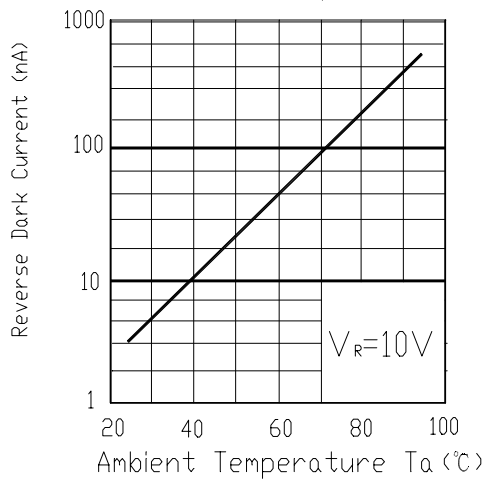


Fig.4 Reverse Light Current vs.  $E_e$

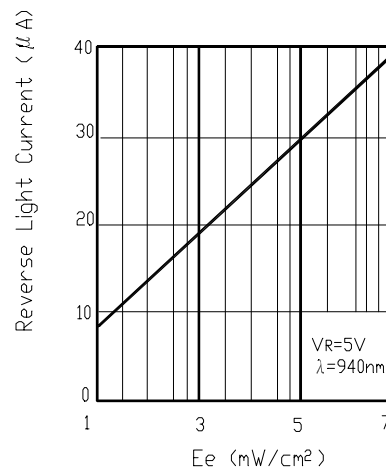


Fig.5 Terminal Capacitance vs. Reverse Voltage

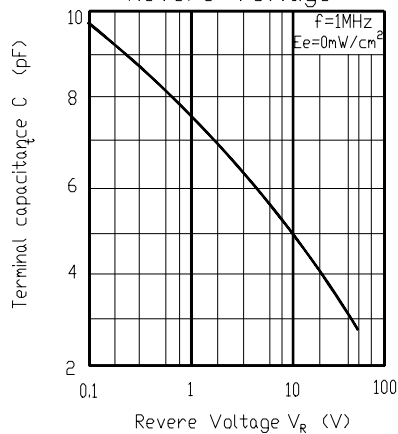
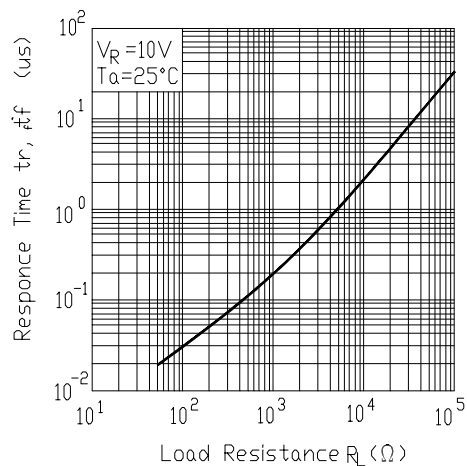


Fig.6 Responce Time vs. Load Resistance





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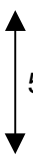
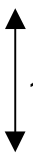
MODEL NO : PD15-22C

### ■ 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	REFLOW	TEMP : 240°C ± 5 °C 5 sec	6 Min	22 PCs	$I_L \leq L \times 0.8$  L:Lower specification limit	0/1
2	Temperature Cycle	H : +85°C      30 min  L : -55°C      30 min	50 cycle	22 PCs		0/1
3	Thermal Shock	H : +100°C    5 min  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 <sub>R</sub> =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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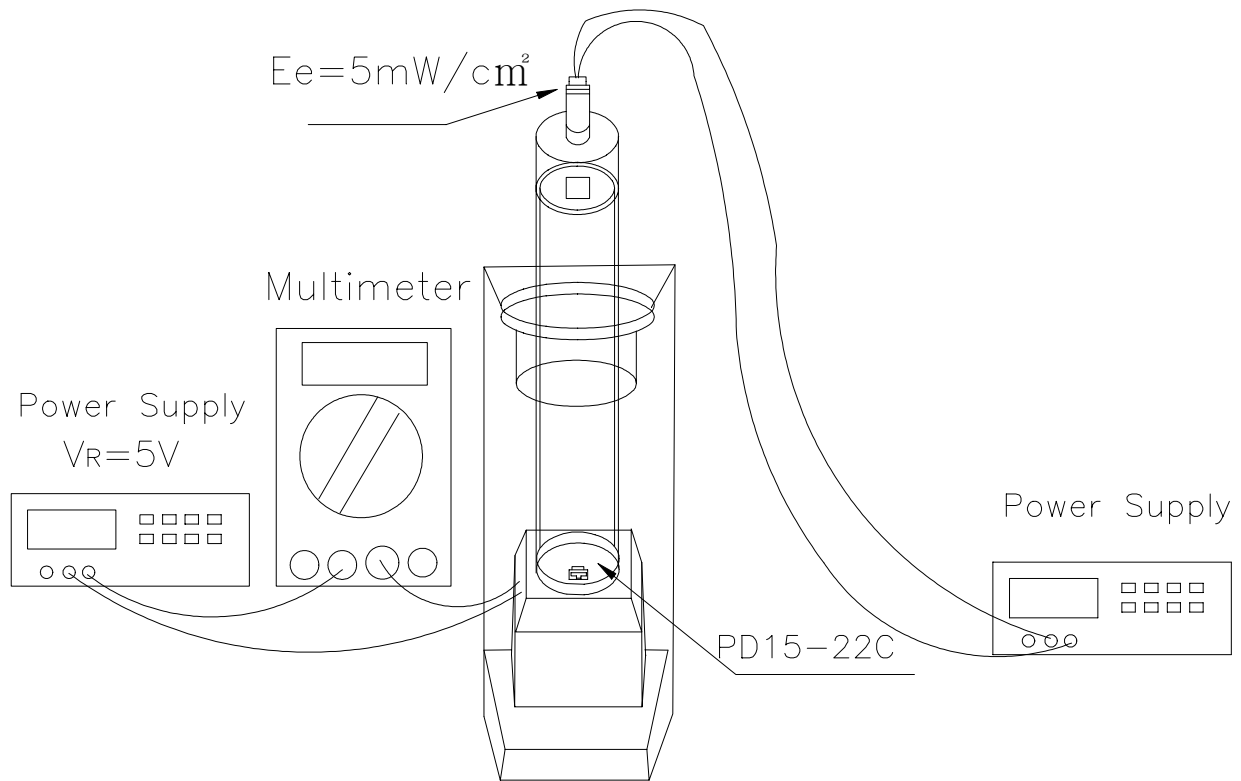
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### ■ Test Method For Reverse Light Current

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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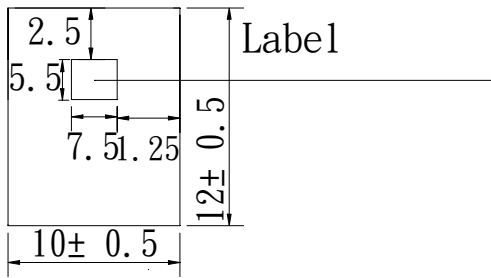
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## 1206 Package Silicon PIN Photodiode

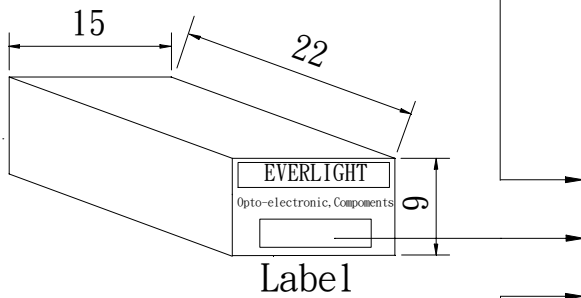
MODEL NO : PD15-22C

### ■ Packing Specifications

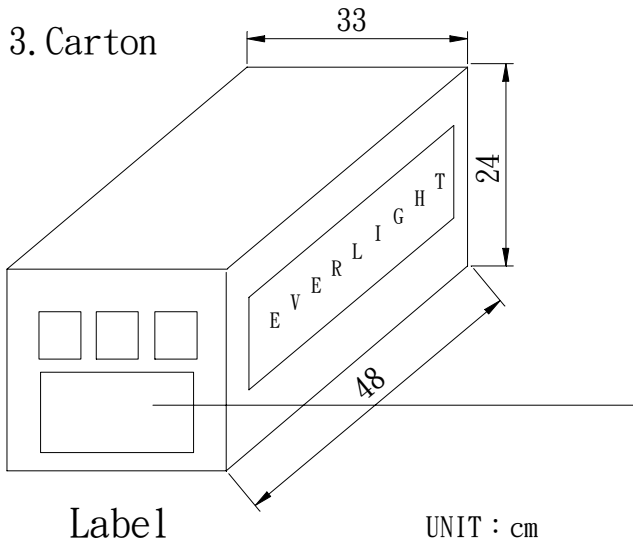
1. Bag



2. Box



3. Carton



Label

UNIT : cm



CPN:

P/N:



PD15-22C

QTY:



LOT NO:

CAT:

HUE:

REF:

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

1.1000Pcs/1Bag , 10Bags/1Box

2.10Boxes/1Carton