



DEVICE NUMBER : DTD-015-033      REV : 1.0  
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## 1206 Package Silicon Pin Photodiode

MODEL NO : PD15-21C/TR8

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### ■ Features :

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

### ■ Description :

- PD15-21C is a high speed and high sensitive PIN photodiode in miniature SMD which is molded in a water clear with flat top view lens. The device is spectrally matched with the infrared emitting diode.

### ■ Applications :

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

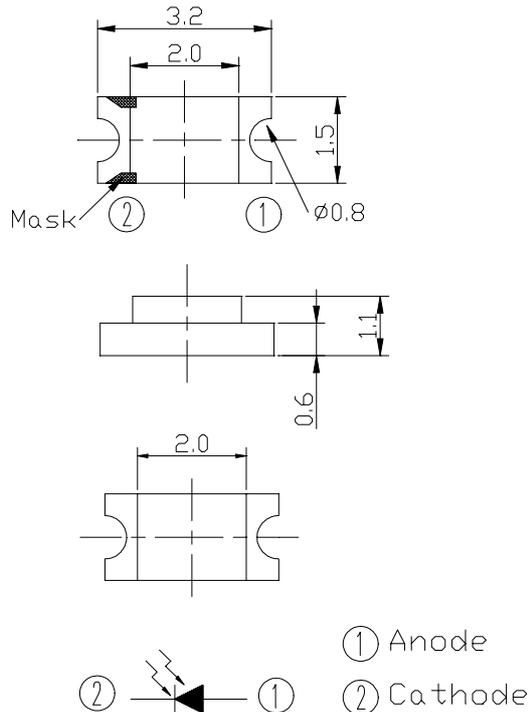
PART NO.	CHIP	LENS COLOR
	MATERIAL	
PD	Silicon	Water clear

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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 : Water clear.
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 $T_A = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit	Notice
Reverse Voltage	$V_R$	32	V	
Power Dissipation	$P_d$	150	mW	
Lead Soldering Temperature	$T_{sol}$	260	$^\circ\text{C}$	4mm from mold body less than 5 seconds
Operating Temperature	$T_{opr}$	-25 ~ +85	$^\circ\text{C}$	
Storage Temperature	$T_{stg}$	-40 ~ +85	$^\circ\text{C}$	

### ■ 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	$V_{OC}$	----	0.42	----	V	$E_e=5\text{mW/cm}^2$ $\lambda_p=940\text{nm}$
Short-Circuit Current	$I_{SC}$	----	3.0	----	$\mu\text{A}$	
Reverse Light Current	$I_L$	----	3.0	----	$\mu\text{A}$	$E_e=5\text{mW/cm}^2$ $\lambda_p=940\text{nm}$ $V_R=5\text{V}$
Dark Current	$I_D$	----	----	10	nA	$E_e=0\text{mW/cm}^2$ $V_R=10\text{V}$
Reverse Breakdown Voltage	$B_{VR}$	32	170	----	V	$E_e=0\text{mW/cm}^2$ $I_R=100\mu\text{A}$
Total Capacitance	$C_t$	----	5	----	pF	$E_e=0\text{mW/cm}^2$ $f=1\text{MHZ}$ $V_R=5\text{V}$
Rise/Fall Time	$t_r/t_f$	----	6/6	----	nS	$R_L=1000\Omega$ $V_R=10\text{V}$



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Typical Electrical/Optical/Characteristics Curves

Fig. 1 Power Dissipation vs. Ambient Temperature

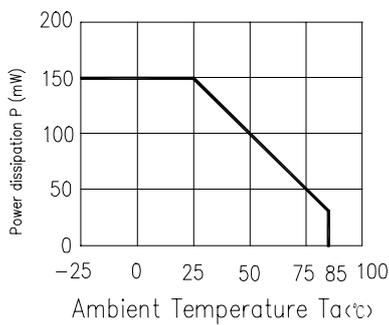


Fig.2 Spectral Sensitivity

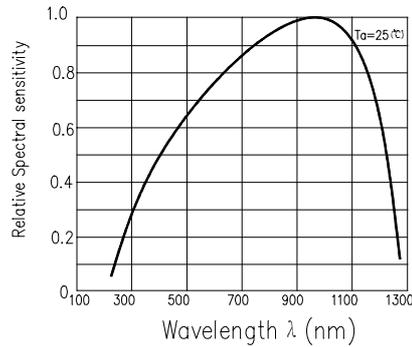


Fig.3 Dark Current vs. Ambient Temperature

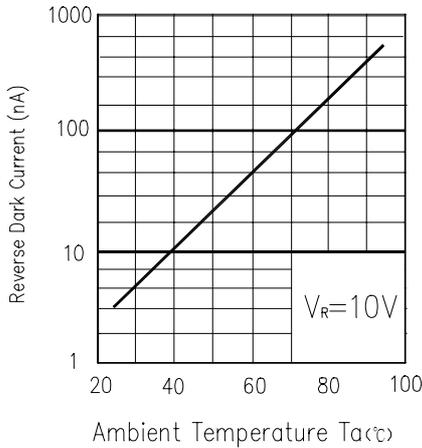


Fig.4 Reverse Light Current vs.  $E_e$

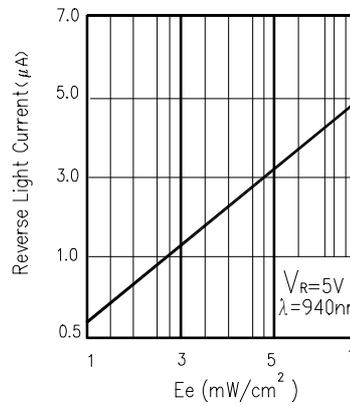


Fig.5 Terminal Capacitance vs. Reverse Voltage

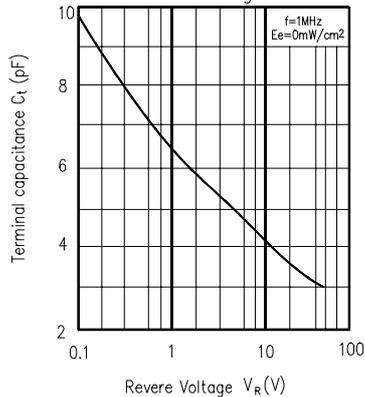
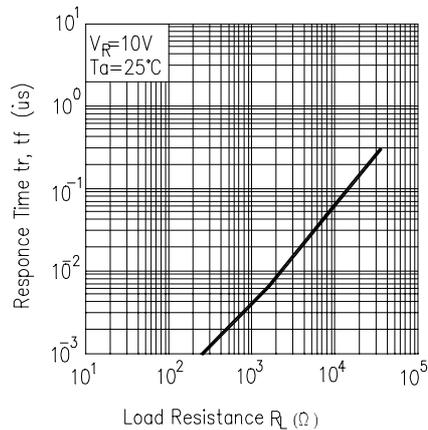


Fig.6 Responce Time vs. Load Resistance





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### ■ 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 Sizes	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP : 240°C ± 5 °C 5 sec	6 min	22 pcs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : +85°C      30 mins ↕ 5 mins ↕ L : -55°C      30 mins	50 cycles	22 pcs	$I_L \leq L \times 0.8$  L :Lower specification limit	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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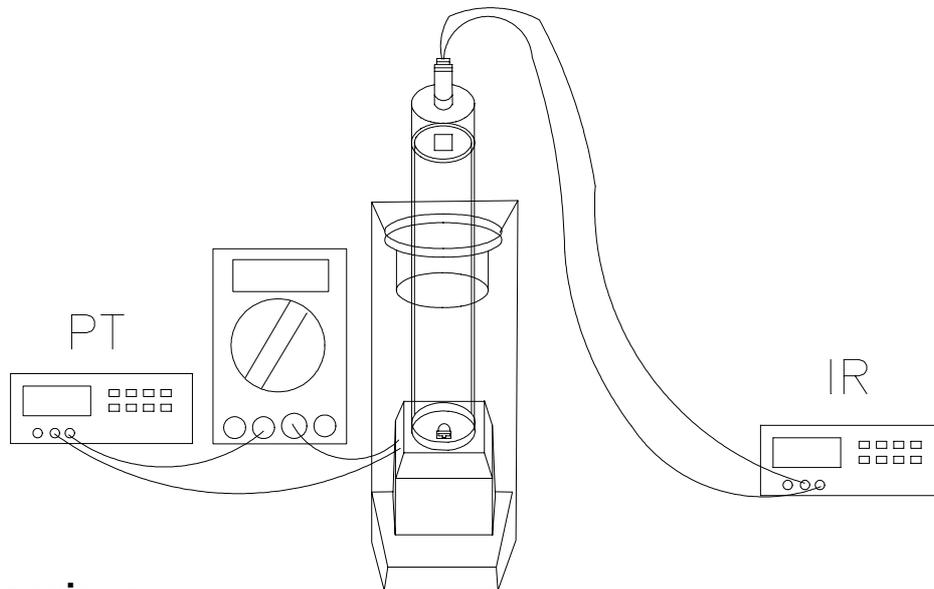
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#### ■ Test Method For Reverse Light Current

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

Test Item: Reverse Light Current)

Unit :  $\mu\text{A}$



#### ■ Taping Dimensions:

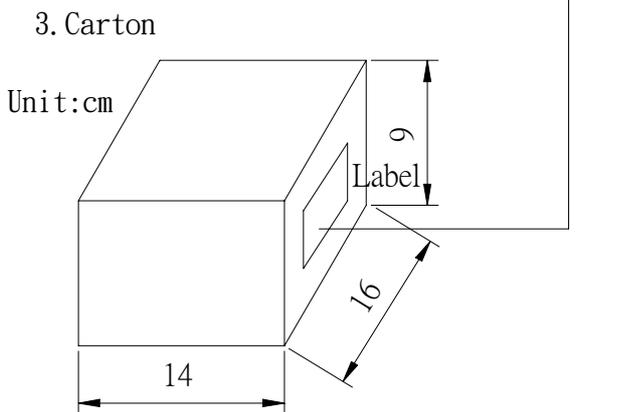
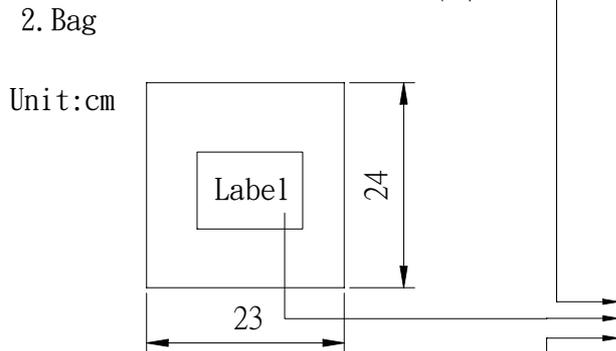
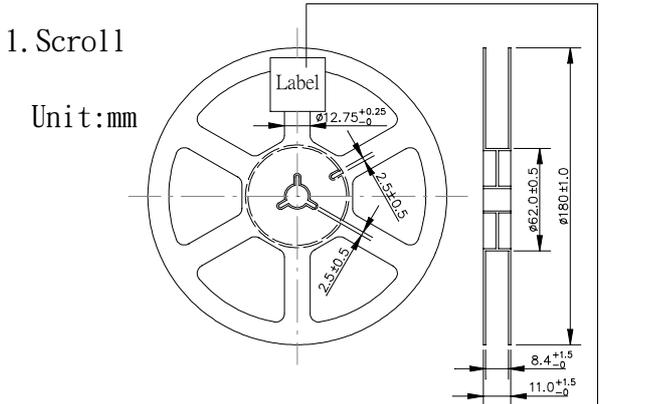


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### ■ Packing Specifications



CPN:  
P/N:  
  
 PD15-21C/TR8  
 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. 2000 Pcs/1 Volume , 1 Volume/1Bag
2. 55 Bags/1Carton