



1206 Package Silicon Pin Photodiode

MODEL NO : PD15-21C/TR8

■ 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 :

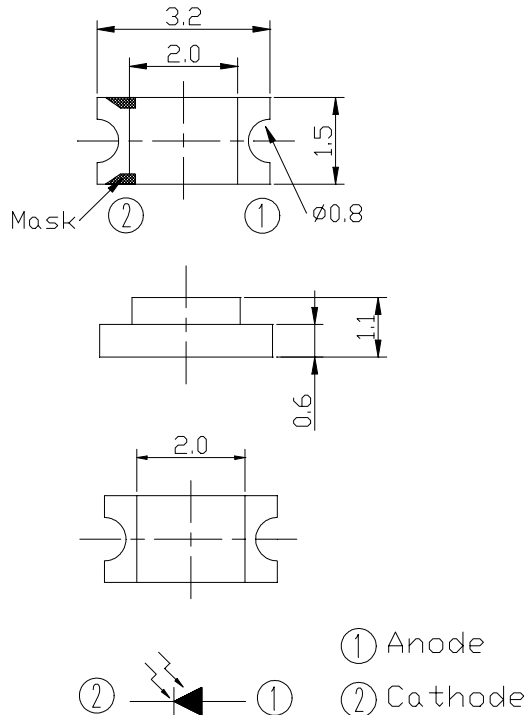
- High speed photo detector
- Camera
- Infrared remote controller for TVs VCR, audio equipment, air conditioner, etc.

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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■ 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	λ_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	----	μA	
Reverse Light Current	I_L	----	3.0	----	μA	$E_e=5\text{mW/cm}^2$ $\lambda_p=940\text{nm}$ $V_R=5\text{V}$
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

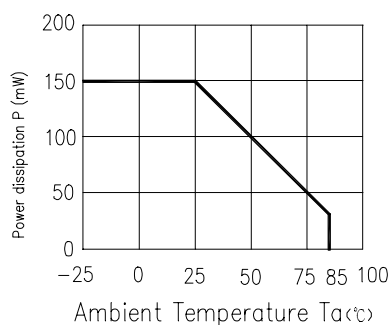


Fig.2 Spectral Sensitivity

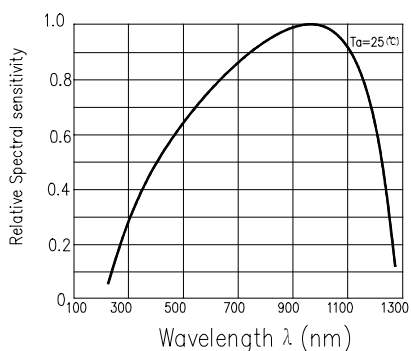


Fig.3 Dark Current vs. Ambient Temperature

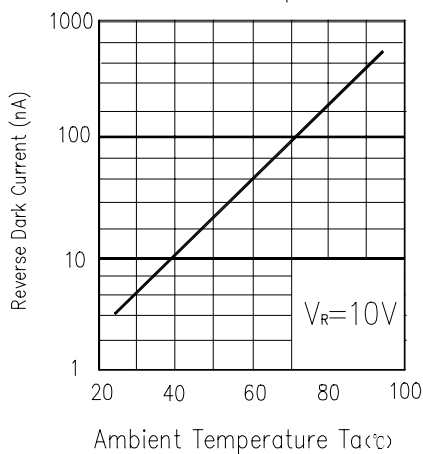


Fig.4 Reverse Light Current vs. E_e

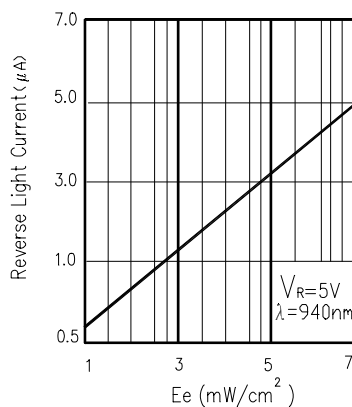


Fig.5 Terminal Capacitance vs. Reverse Voltage

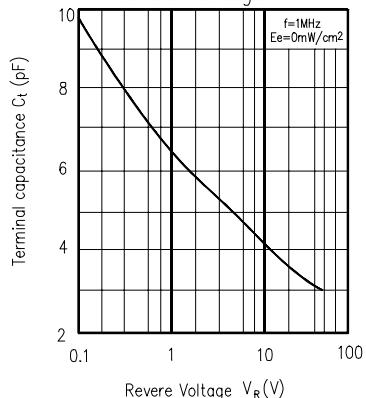
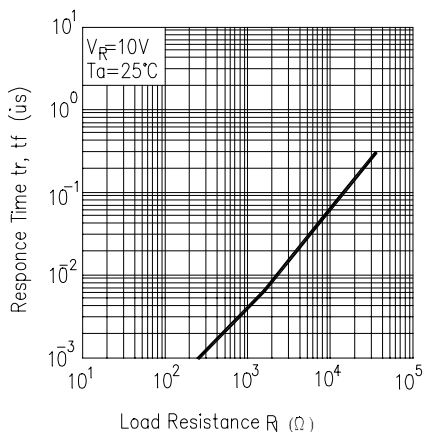


Fig.6 Response Time vs. Load Resistance





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DEVICE NUMBER : DTD-015-033 REV : 1.0
 ECN : _____ PAGE : 5/7

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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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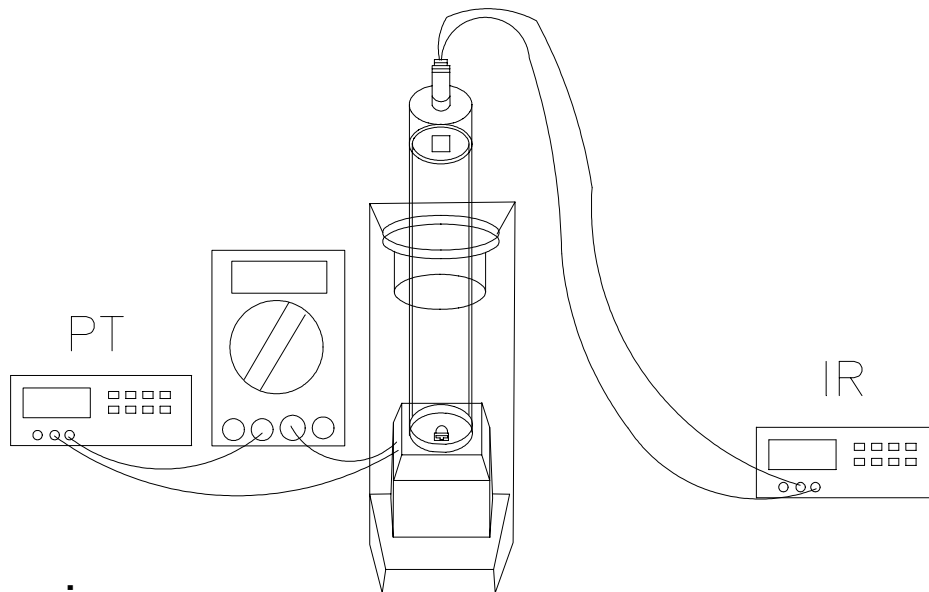
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■ Test Method For Reverse Light Current

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

Test Item: Reverse Light Current)

Unit : μA



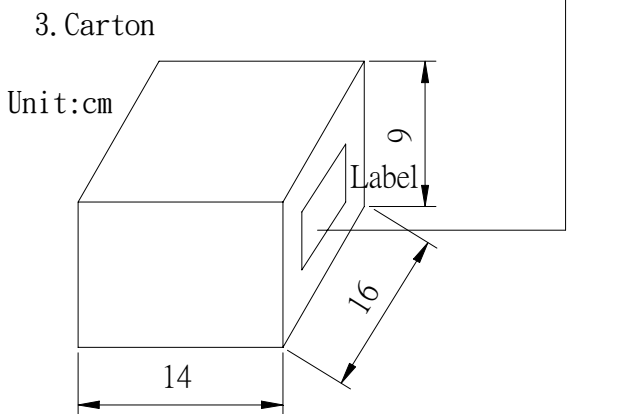
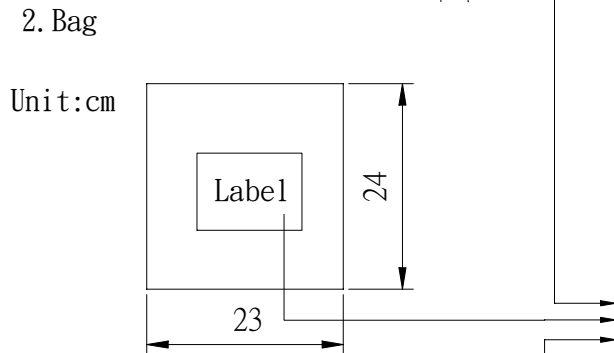
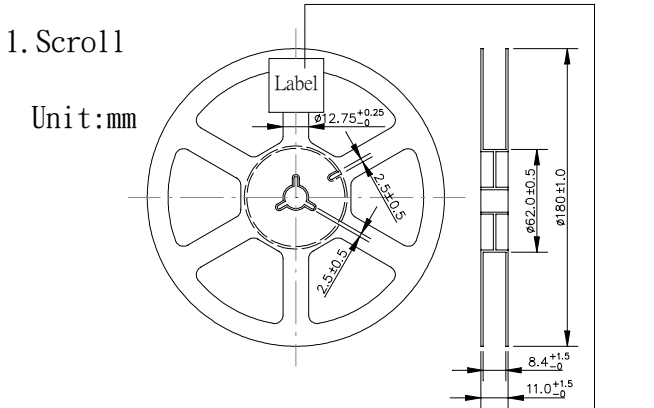
■ Taping Dimensions:



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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

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