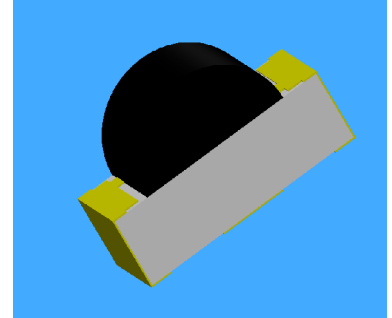


PD12-21B/L458/TR8

Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape on 7" diameter reels.
- Pb free
- The product itself will remain within RoHS compliant version.



Descriptions

- PD12-21B/L458/TR8 is a phototransistor in miniature SMD package
PIN photodiode in miniature flat top view lens
SMD package and it is molded in a black plastic.
The device is Spectrally matched to infrared emitting diode.

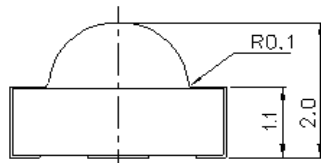
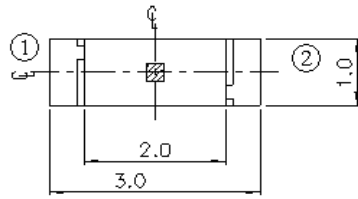
Applications

- High speed photo detector
- Copier
- Game machine

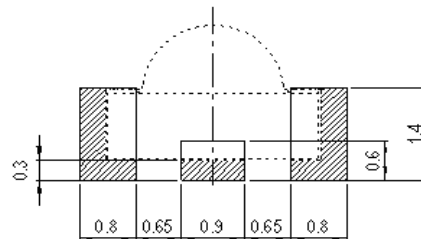
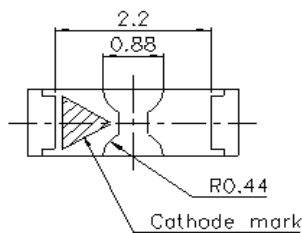
Device Selection Guide

LED Part No.	Chip	Resin Color
	Material	
PD	Silicon	Black

Package Dimensions



For reflow soldering (propose)



- Notes:** 1.All dimensions are in millimeters
2.Tolerances unless dimensions $\pm 0.1\text{mm}$

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Units
Reverse Voltage	V_R	32	V
Operating Temperature	T_{opr}	-40 ~ +85	
Storage Temperature	T_{stg}	-40 ~ +100	
Soldering Temperature	T_{sol}	260	
Power Dissipation at(or below) 25 Free Air Temperature	P_c	150	mW

Notes: *1:Soldering time 5 seconds.

Electro-Optical Characteristics (Ta=25)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	0.5	---	730	---	1100	nm
Wavelength Of Peak Sensitivity	P	---	---	940	---	nm
Open-Circuit Voltage	V _{OC}	Ee=1mW /cm ² p=875nm	---	0.42	---	V
Short-Circuit Current	I _{SC}	Ee=1mW /cm ² p=875nm	---	1.3	---	μ A
Reverse Light Current	I _L	Ee=1mW /cm ² p=875nm V _R =5V	1.3	1.5	---	μ A
Dark Current	I _D	Ee=0mW /cm ² V _R =10V	---	---	10	nA
Reverse Breakdown Voltage	B _{VR}	Ee=0mW /cm ² I _R =100 μ A	33	170	---	V
Total Capacitance	C _t	Ee=0mW /cm ² f=1MHz V _R =5V	---	2	---	pF
Rise Time	t _r	V _R =5V R _L =1000	---	6	---	nS
Fall Time	t _f		---	6	---	
View Angle	2 1/2	V _R =5V(X)	---	130	---	deg
		V _R =5V(Y)	---	130	---	

Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

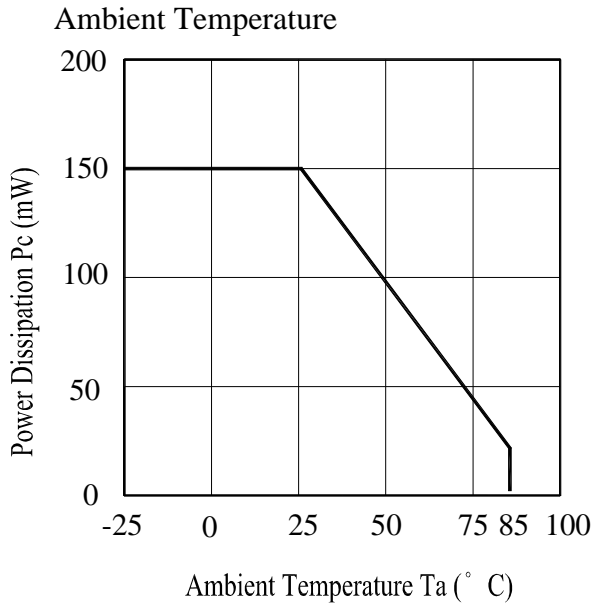


Fig.2 Spectral Sensitivity

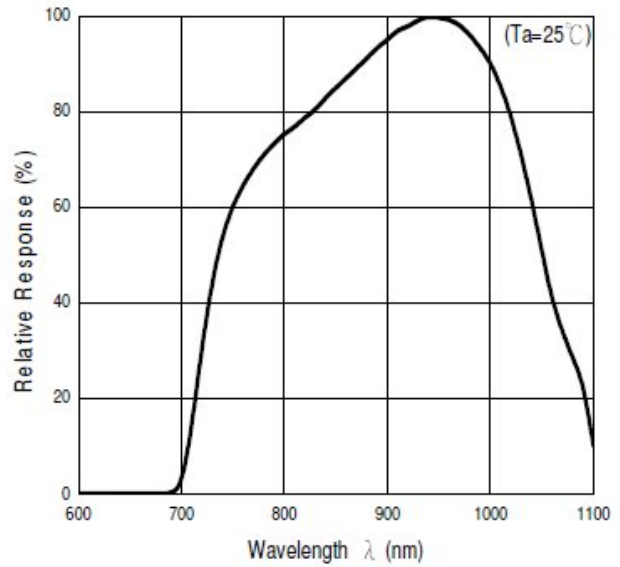


Fig.3 Dark Current vs. Ambient Temperature

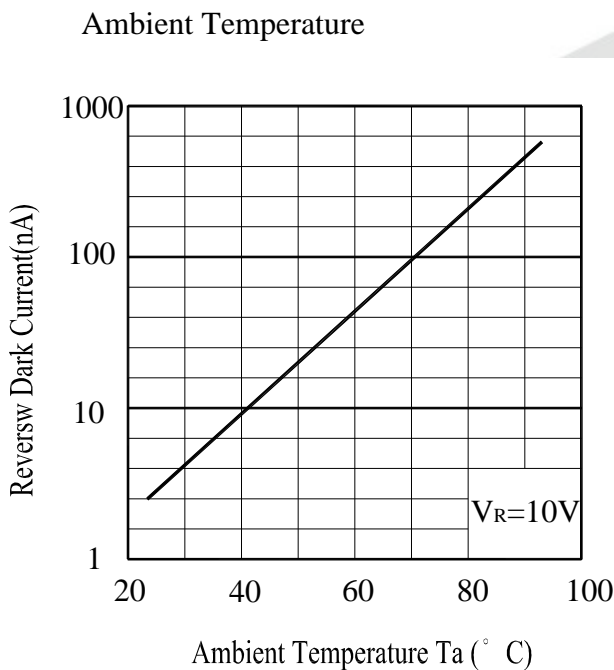
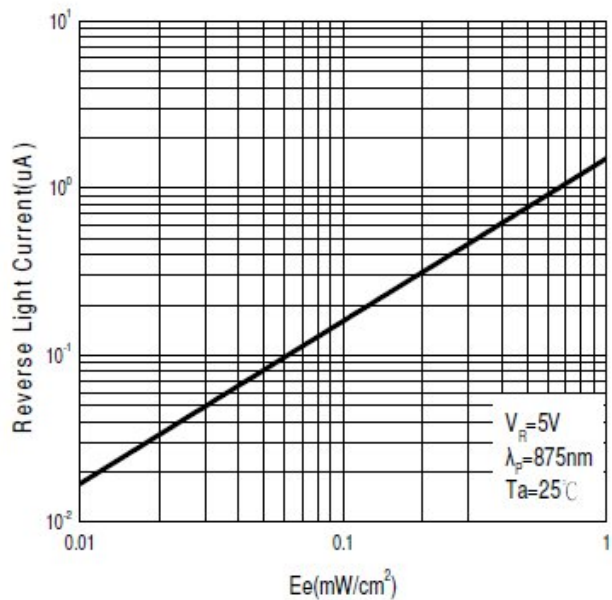


Fig.4 Collector Current vs. E_e



Typical Electro-Optical Characteristics Curves

Fig.5 Terminal Capacitance vs..

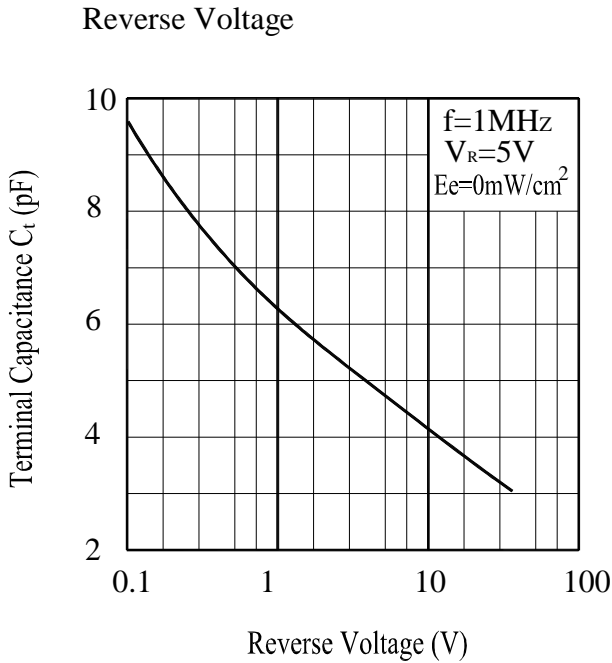


Fig.6 Response Time vs.

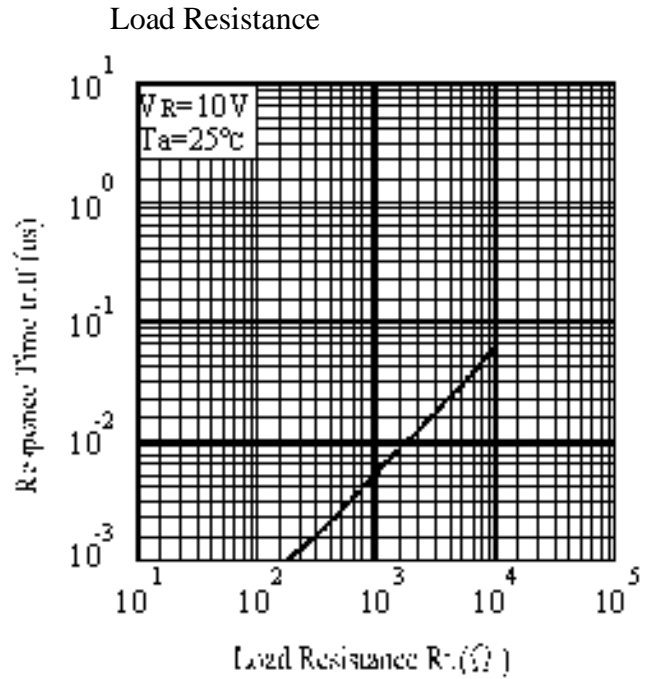
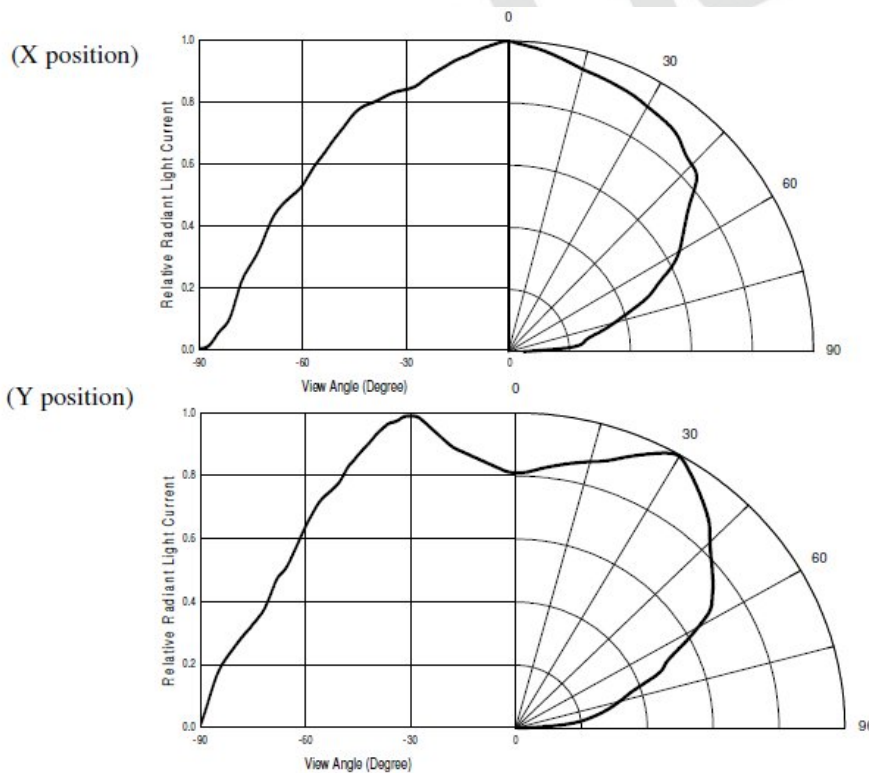


Fig.7 Relative Light Current vs. Angular Displacement



Precautions For Use

1. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30 or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30 or less and 60% RH or less.

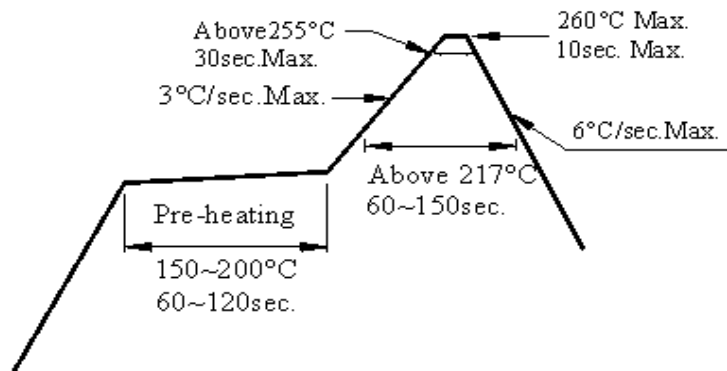
If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60 ± 5 for 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

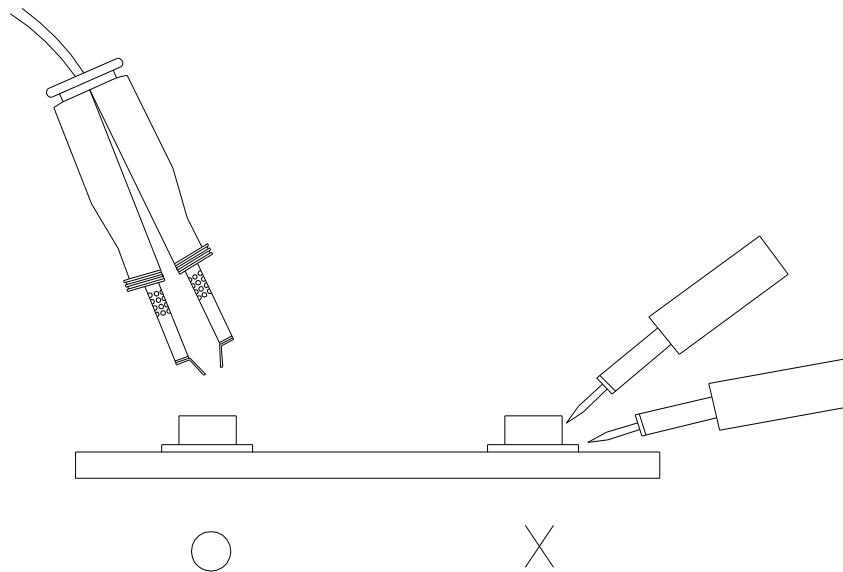
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

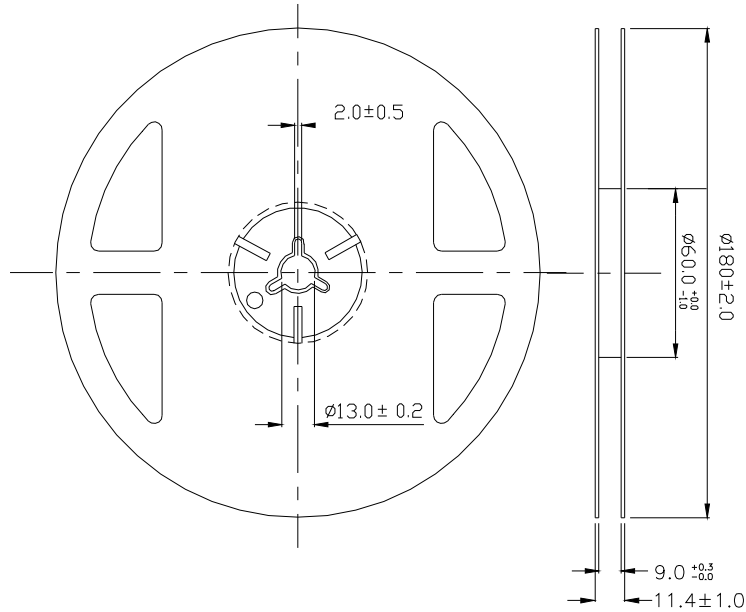
Each terminal is to go to the tip of soldering iron temperature less than 280 for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5.Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

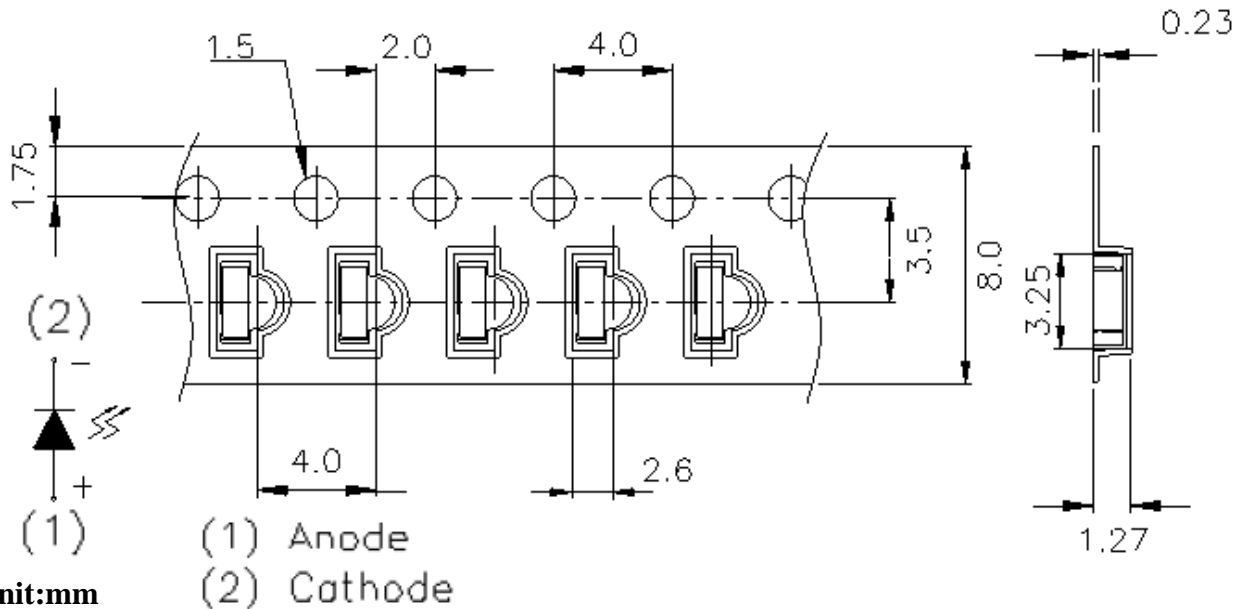


Package Dimensions



Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel :

Progressive direction



Unit:mm

Packing Quantity Specification

- 1.2000Pcs/1Volume , 1Volume/1Bag
- 2.10Boxes/1Carton

Label Form Specification

The diagram shows a rectangular label form with the following elements:

- Top left: A circular logo containing the letters 'Rb'.
- Top center: A rectangular box containing the word 'EVERLIGHT'.
- Top right: A small empty circle.
- Below the logo: 'CPN :', 'P/N : XXXXXXXXXXXX', and a barcode.
- Below the barcode: 'PD12-21B/L458/TR8'.
- Below the product code: 'QTY : XXX', 'LOT NO : XXXXXXXXXXXX', and a barcode.
- Below the lot number: 'Reference : XXXXXXXXXXXX' and a barcode.
- Bottom center: 'MADE IN TAIWAN'.
- Right side: A rectangular box containing 'RoHS'.
- Text on the right side of the form: 'CAT : XX', 'HUE : XX', 'REF : XX'.

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

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using 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.
3. 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.

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