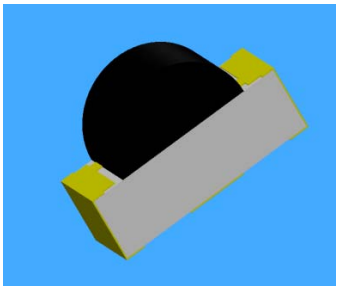
DATASHEET

Chip Photodiode with Right Angle Lens
PD12-21B/L458/TR8



Features
- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape in “7” diameter reel
- Pb free
- The product itself will remain within RoHS compliant version
- Compliance with EU REACH

Descriptions
- PD12-21B/L458/TR8 is a high speed and high sensitive 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

Part Category	Chip Material	Lens Color
PD	Silicon	Black

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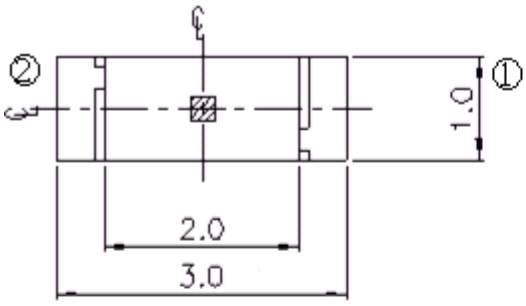
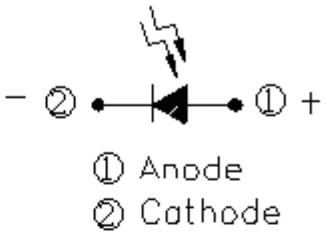
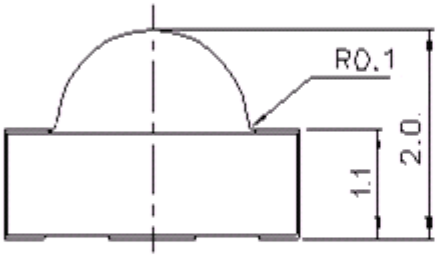
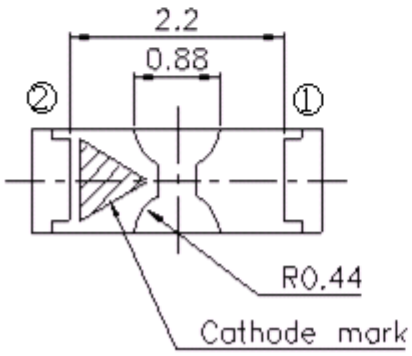
Package Dimensions

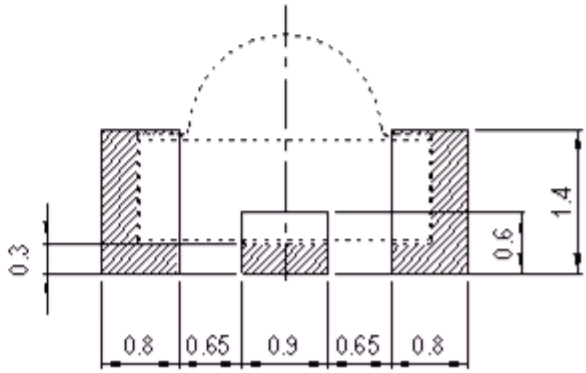






For reflow soldering (propose)





Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.1mm
3.Suggested pad dimension is just for reference only
Please modify the pad dimension based on individual need

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Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Units
Reverse Voltage	V_R	32	V
Operating Temperature	T_{opr}	-25~ +85	℃
Storage Temperature	T_{stg}	-40~ +85	℃
Soldering Temperature *1	T_{sol}	260	℃
Power Dissipation at(or below) 25℃Free Air Temperature	P_d	150	mW

Notes: *1: Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Range Of Spectral Bandwidth	$\lambda_{0.5}$	---	730	---	1050	nm
Wavelength Of Peak Sensitivity	λ_P	---	---	940	---	nm
Open-Circuit Voltage	V_{OC}	Ee=1mW/cm^2 λ_P=875nm	---	0.42	---	V
Short-Circuit Current	I_{SC}	Ee=1mW/cm^2 λ_P=875nm	---	1.3	---	μA
Reverse Light Current	I_L	Ee=1mW/cm^2 λ_P=875nm V_R=5V	1.3	1.5	---	μA
Dark Current	I_D	Ee=0mW/cm^2 V_R=10V	---	---	10	nA
Reverse Breakdown Voltage	V_{BR}	Ee=0mW/cm^2 I_R=100μA	33	170	---	V

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Typical Electro-Optical Characteristics Curves

Fig.1 Spectral Sensitivity

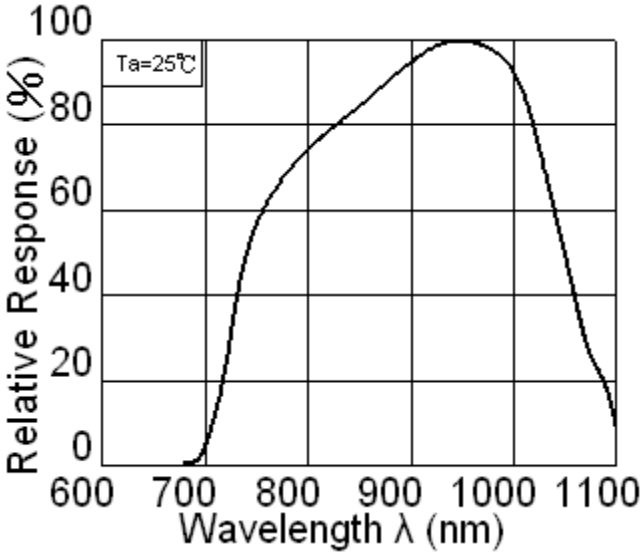
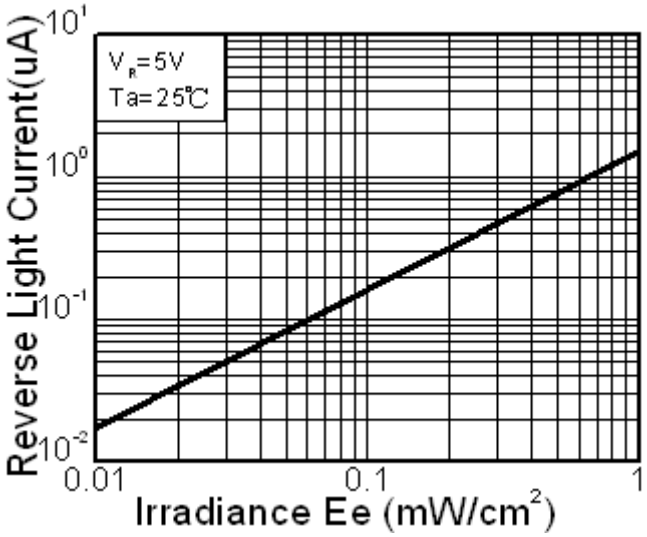


Fig.2 Reverse Light Current vs. Ee



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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 10℃~30℃ and 90%RH or less.

   2.3 The LEDs suggested be used within one year.

   2.4 After opening the package, the devices must be stored at 10°C~30°C and ≤ 60%RH, and used within one year (floor life). If unused LEDs remain, it should be stored in moisture proof packages.

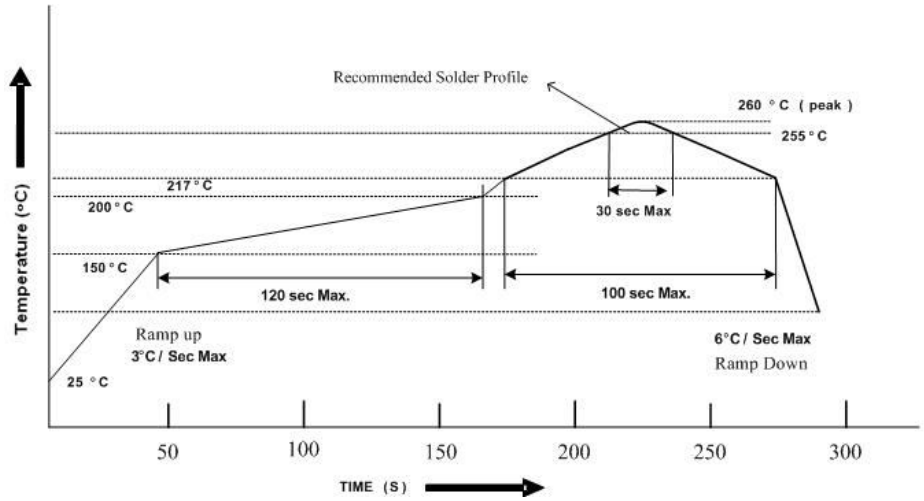
   2.5 If the moisture absorbent material (desiccant material) has faded or unopened bag has exceeded the shelf life or devices (out of bag) have exceeded the floor life, baking treatment is required.

   2.6 If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure or recommend the following conditions:

   96 hours at 60°C ± 5°C and < 5 % RH (reeled/tubed/loose units)

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.

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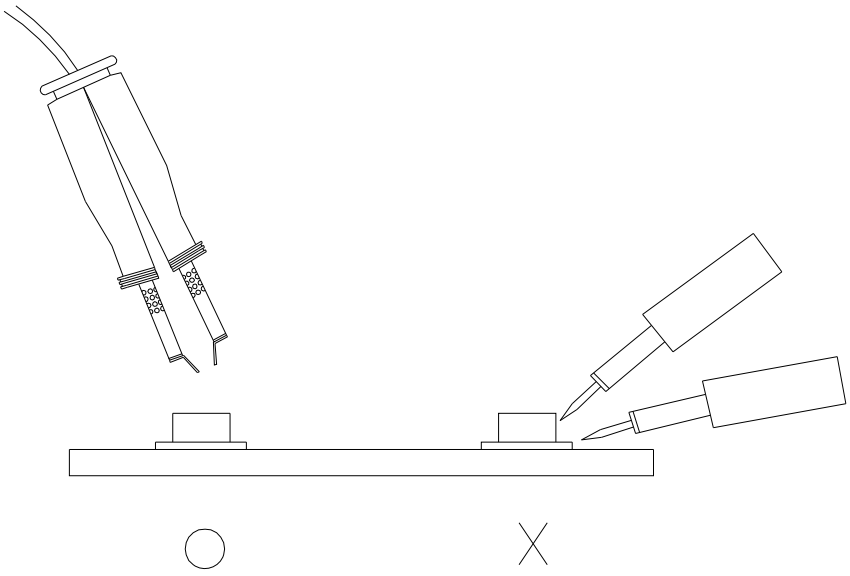
4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ 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.



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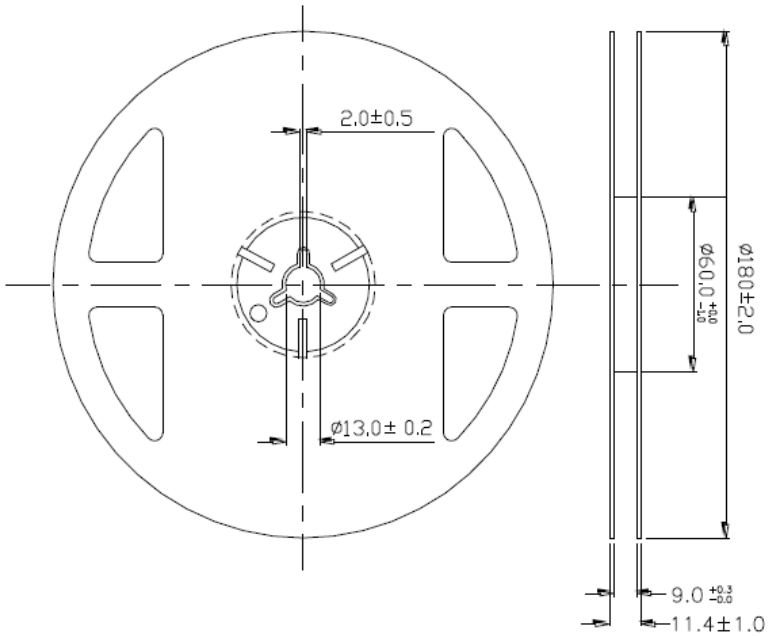
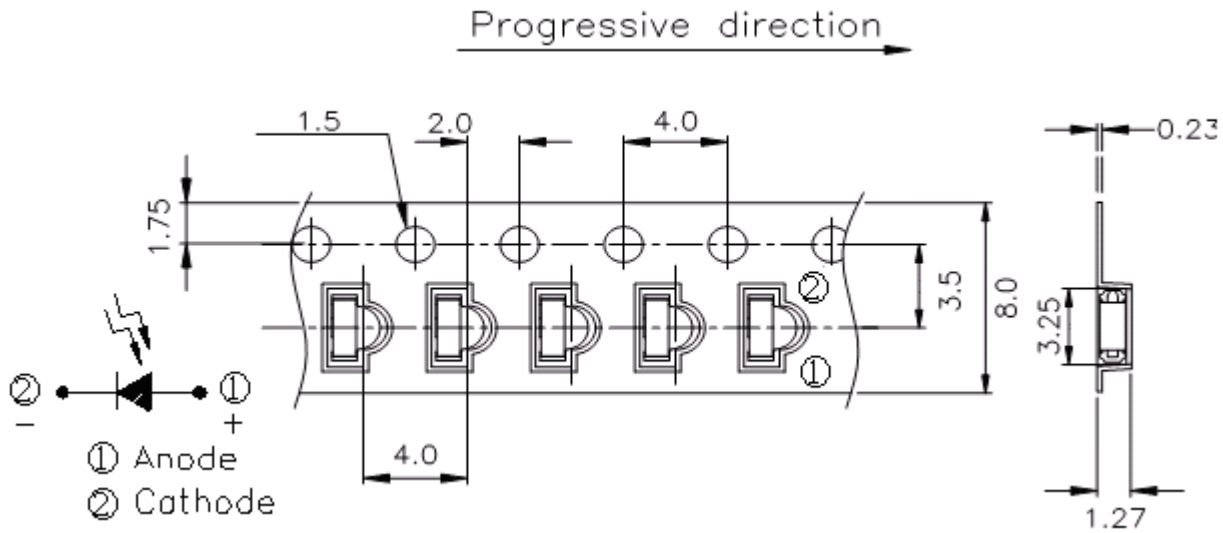
Package Dimensions



Note: The tolerances unless mentioned are ±0.1mm, Unit: mm

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



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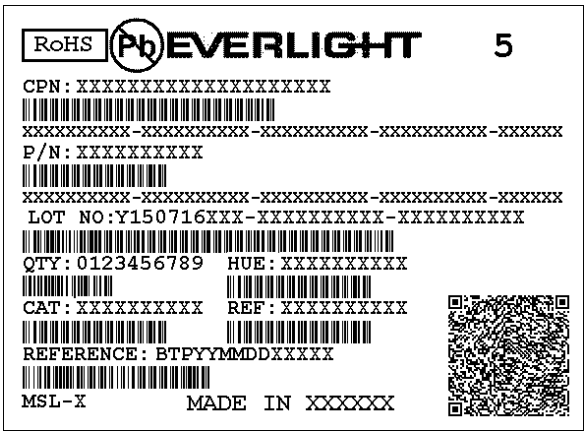
Label Form Specification



CPN: Customer's Production Number
P/N : Production Number
LOT No: Lot Number
QTY: Packing Quantity
HUE: Peak Wavelength
CAT: Ranks
REF: Reference
MSL-X: MSL Level
Made In: Manufacture place

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
3. 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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