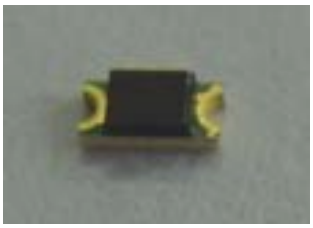
DATASHEET

1206 Package Silicin PIN Photodiode

PD15-21B/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.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)

Descriptions

- PD15-21B/TR8 is a phototransistor in miniature SMD package which is molded in a Black epoxy with spherical top view lens.
- The device is Spectrally matched to infrared emitting diode.

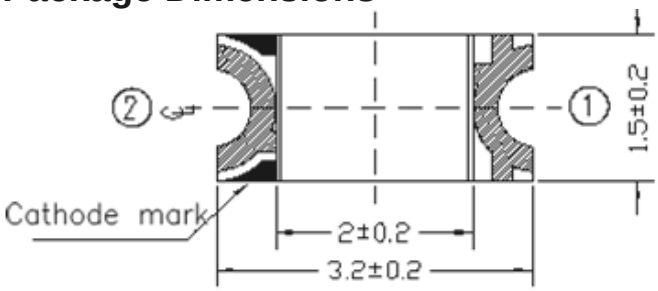
Applications

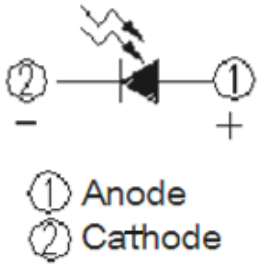
- Miniature switch
- Counters and sorter
- Position sensor
- Infrared applied system

Device Selection Guide

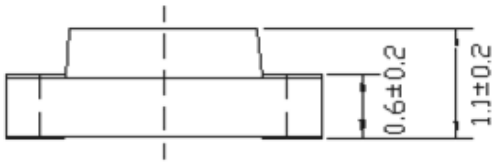
Device No.	Chip Material	Lens Color
PD	Silicon	Black

Package Dimensions

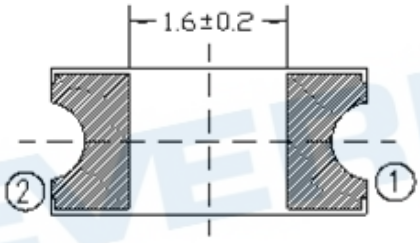


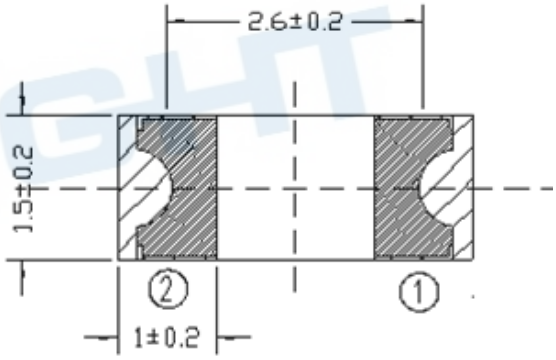


① Anode
② Cathode



For reflow soldering(propose)





Notes: 1.Alldimensions 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

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Units
Reverse Voltage	V_R	32	V
Operating Temperature	Topr	-25 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +85	℃
Soldering Temperature *1	Tsol	260	℃
Power Dissipation at(or below) 25℃Free Air Temperature	Pd	150	mW

Notes: *1:Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	λ0.5	---	730	---	1100	nm
Wavelength Of Peak Sensitivity	λP	---	---	940	---	nm
Short-Circuit Current	I_{SC}	Ee=1mW/cm2 λP=940nm	---	0.8	---	μA
Reverse Light Current	I_L	Ee=1mW/cm2 λP=940nm VR=5V	0.2	0.8		μA
Dark Current	I_D	Ee=0mW/cm2 VR=10V	---	---	10	nA
Reverse Breakdown Voltage	B_{VR}	Ee=0mW/cm2 IR=100μA	32	170	---	V

Typical Electro-Optical Characteristics Curves

Fig.1Power Dissipation vs. Ambient Temperature

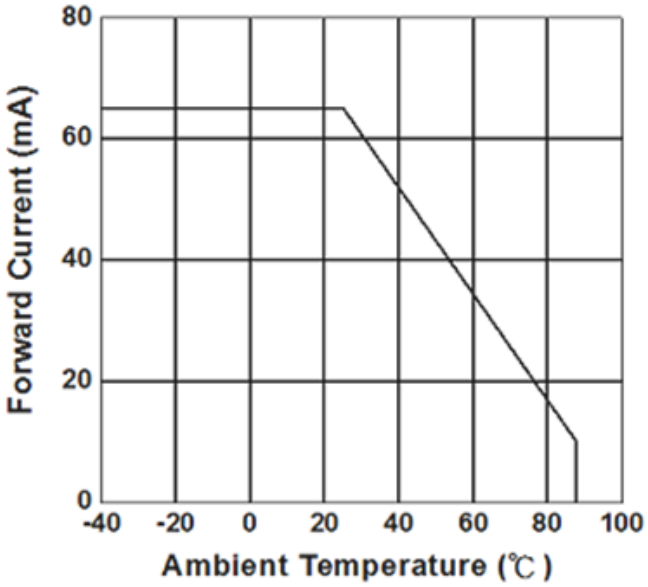


Fig.2 Spectral Sensitivity

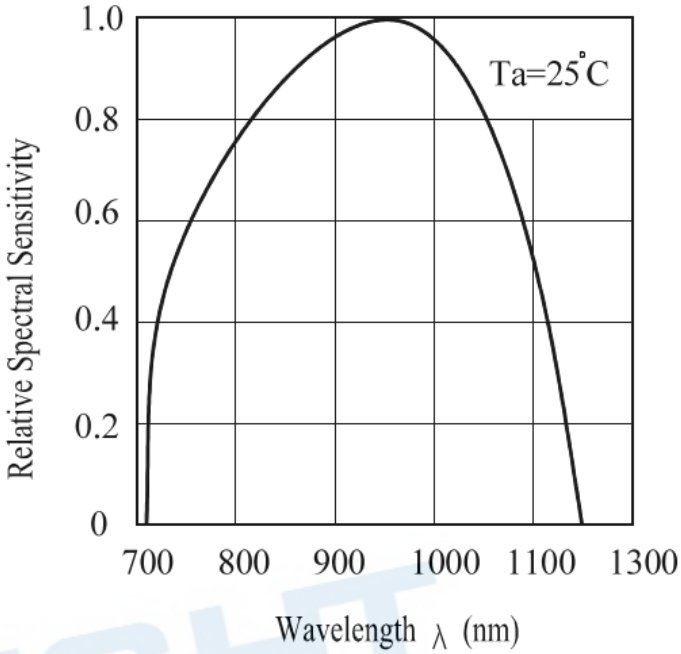


Fig.3 Dark Current vs. Ambient Temperature

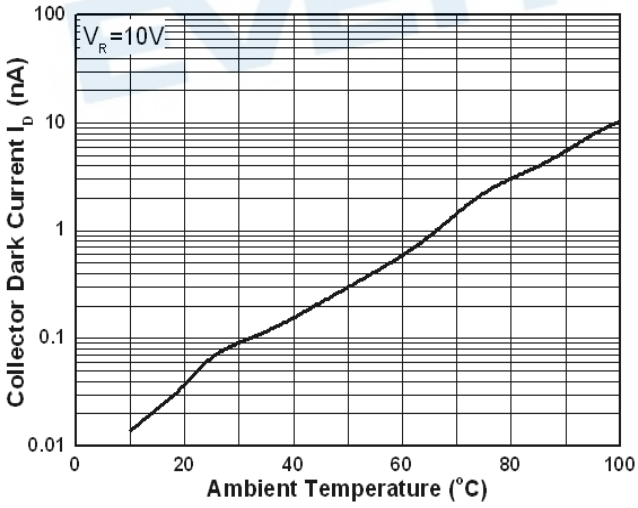


Fig.4 Reverse Light Current vs. Ee

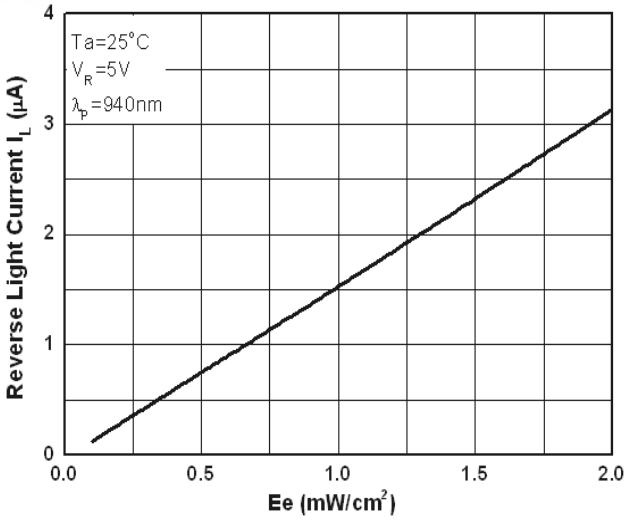
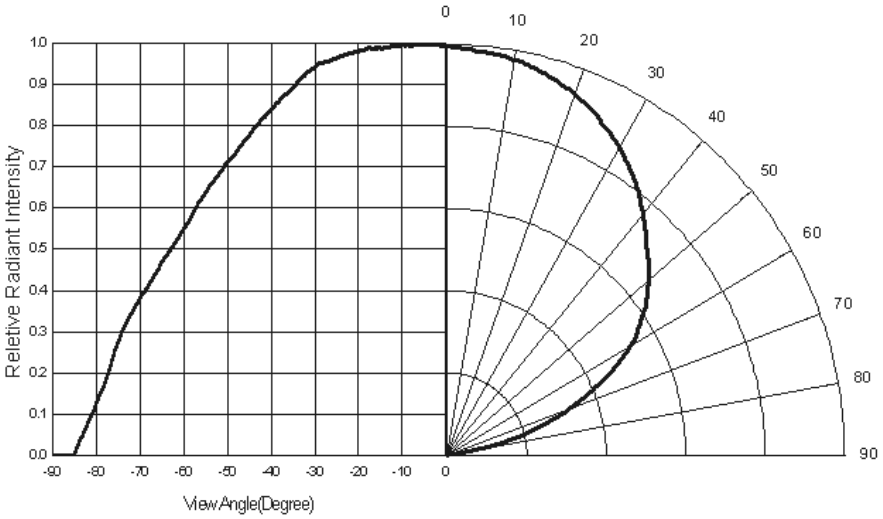


Fig.5 Relative Radiant Intensity vs.
Angular Displacement



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 Phototransistor should be kept at 10℃~30℃ and 90%RH or less.

2.3 The Phototransistor suggested be used within one year.

2.4 After opening the package, the devices must be stored at 10℃~30℃ and ≤ 60%RH, and used within 168 hours (floor life). If unused Phototransistor remain, it should be stored in moisture proof packages.

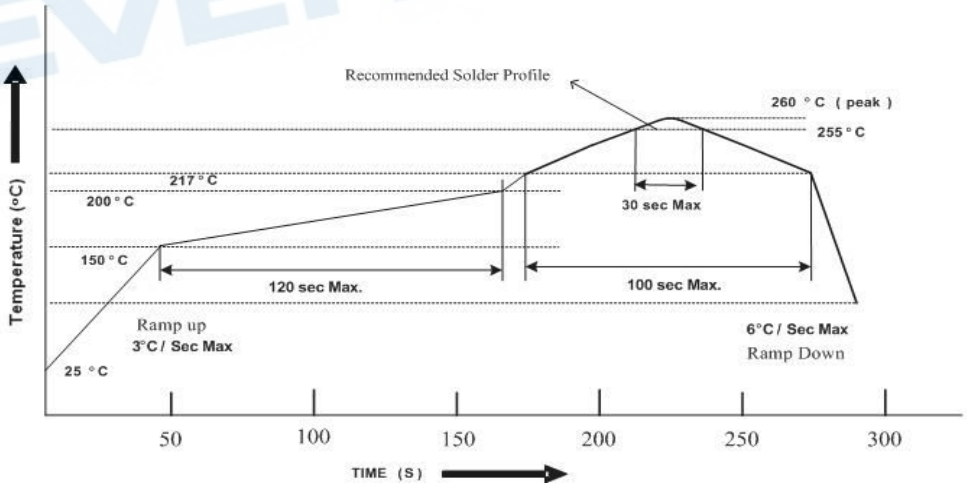
2.5 If the moisture absorbent material (desiccant material) has faded or unopened bag has excee have exceeded the floor life, baking treatment is required.

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℃±5℃ 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 Phototransistor during heating.

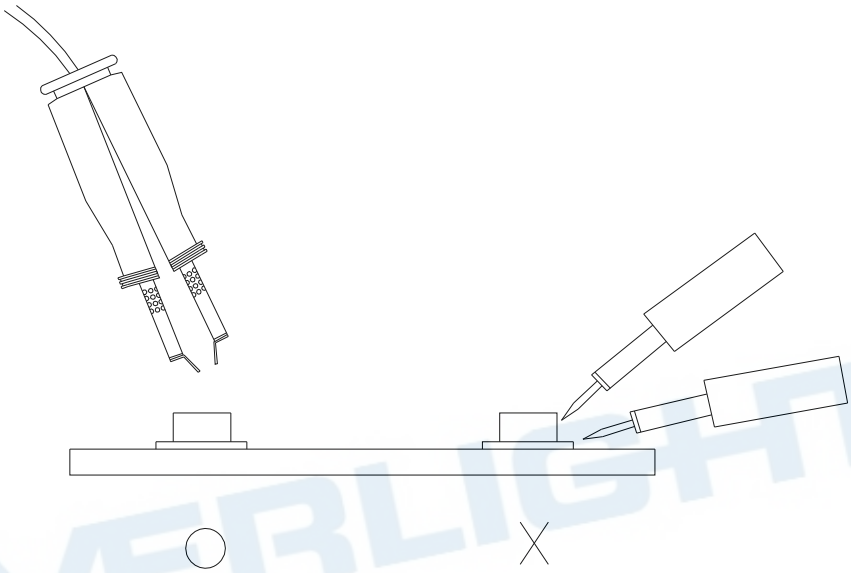
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

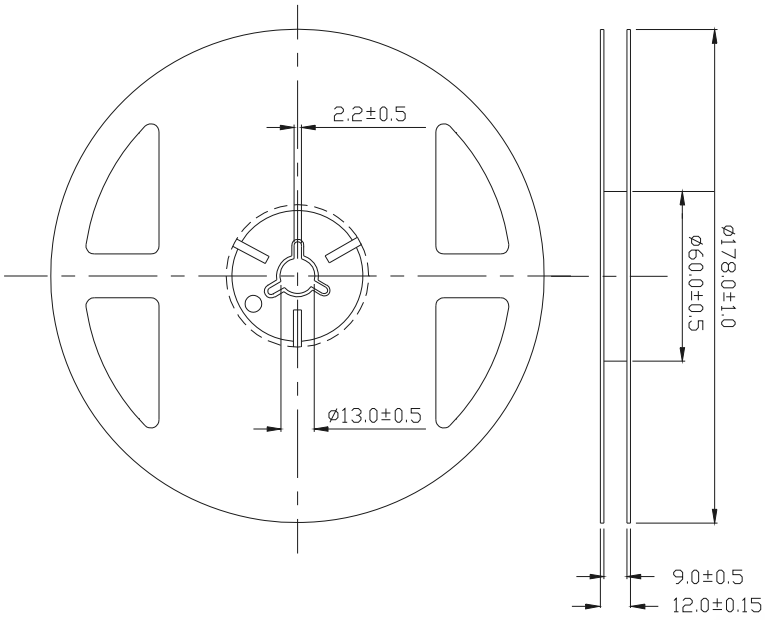
Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the Photo Transister 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 Photo Transister will or will not be damaged by repairing.

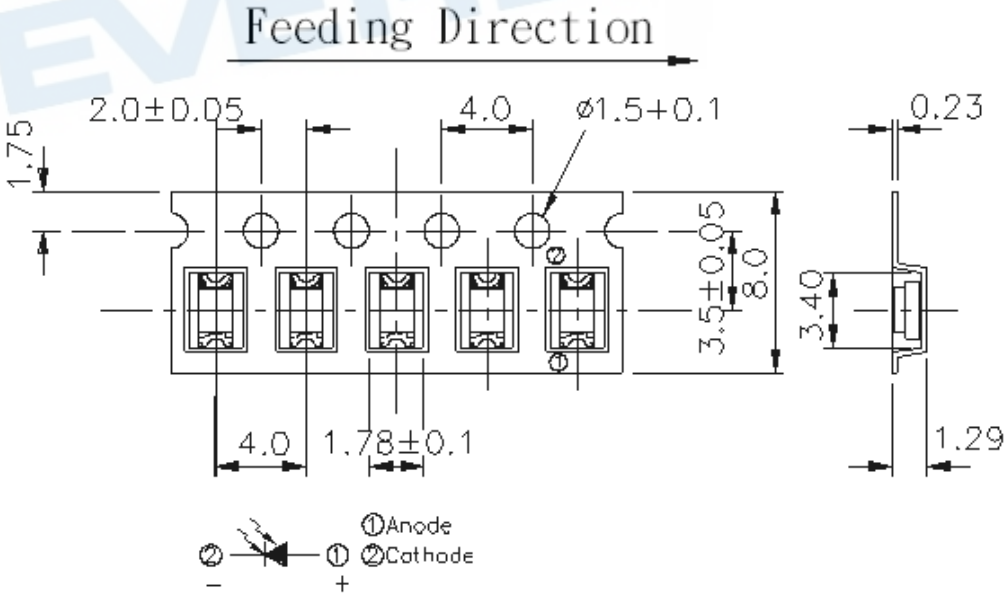


Package Dimensions



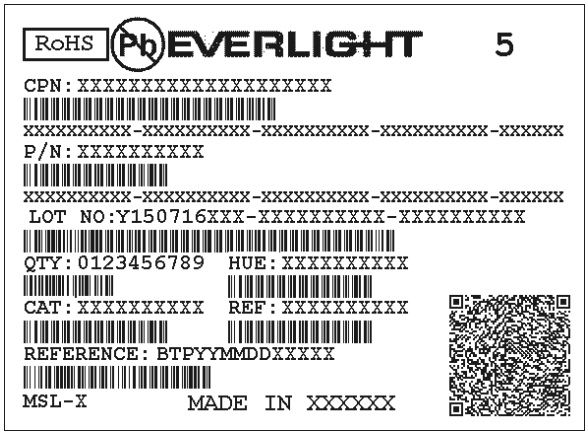
Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Carrier Tape Dimensions:(Quantity: 3000pcs/reel)



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

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

DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. 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 the 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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EVERLIGHT ELECTRONICS CO., LTD.
Tel: 886-2-2685-6688
Office: No. 6-8, Zhonghua Rd., Shulin Dist.,
New Taipei City 23860, Taiwan
Fax: 886-2685-2699 ，6897
http://www.everlight.com