DATASHEET

Technical Data Sheet
Silicon PIN Photodiode
PD15-22B/TR8

Features

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

Description

- PD15-22B/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 visible and infrared emitting diode.

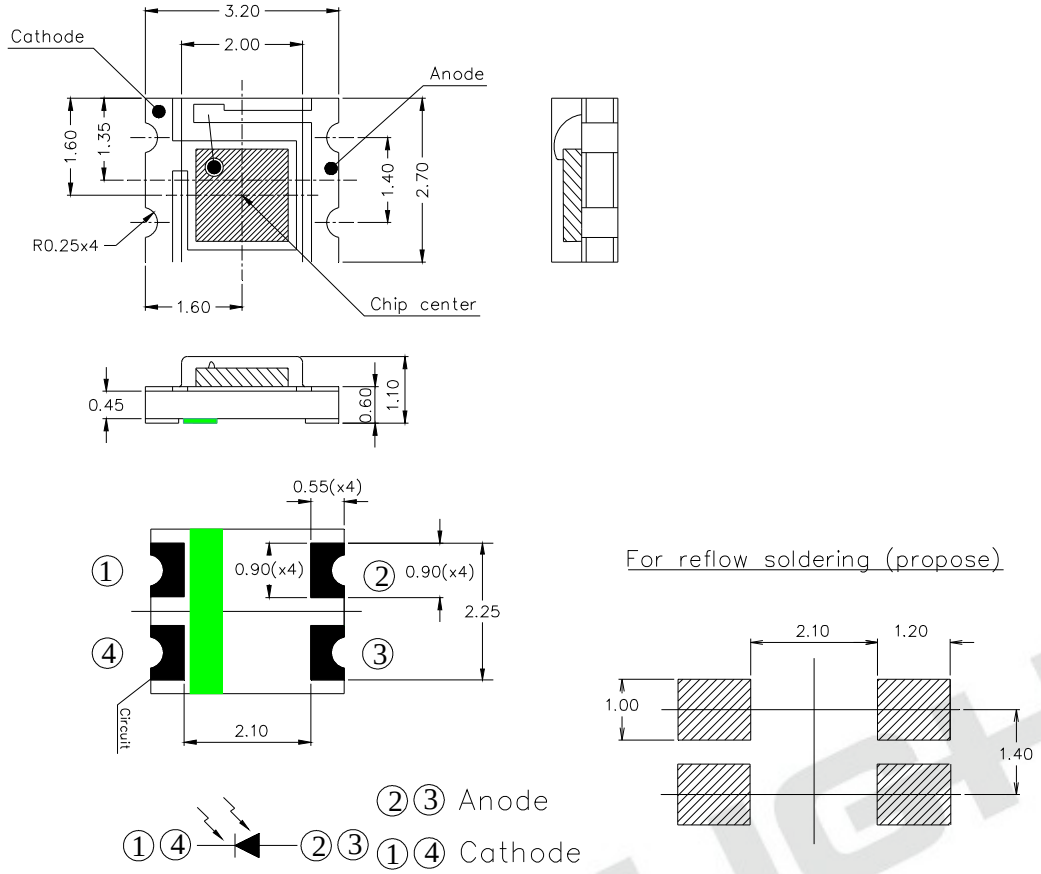
Applications

- High speed photo detector
- Copier
- Game machine

Device Selection Guide

Device No.	Chip Material	Lens Color
PD15-22B/TR8	Silicon	Black

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.1mm

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	32	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +100	℃
Soldering Temperature *1	Tsol	260	℃
Power Dissipation at(or below)	Pc	150	mW
ESD HMB Level	HMB	Min.2000	V

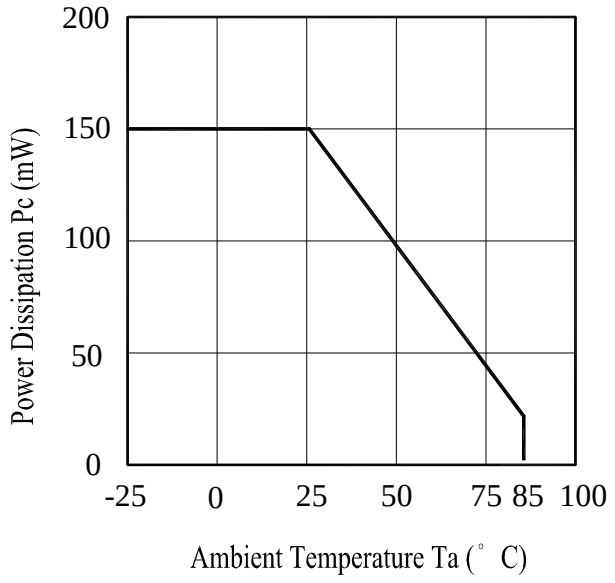
Notes: *1:Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

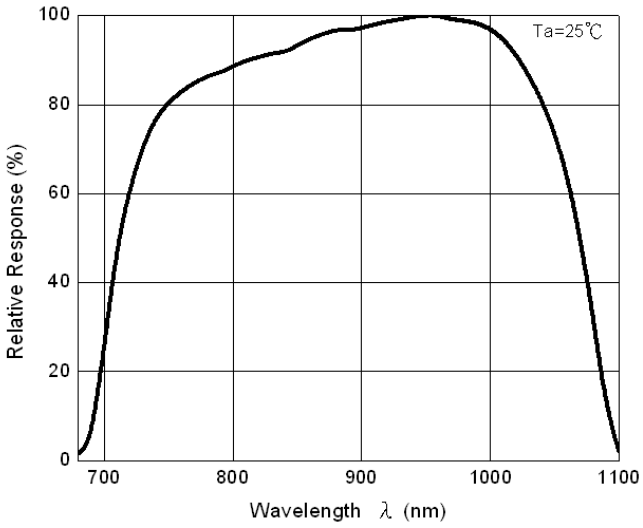
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang Of Spectral Bandwidth	λ	730	---	1100	nm	10% of λ_P
Wavelength Of Peak Sensitivity	λ_P	---	940	---	nm	---
Open-Circuit Voltage	V_{OC}	---	0.41	---	V	Ee=5mW /cm^2 λ_P=940nm
Short-Circuit Current	I_{SC}	4.0	6.5	---	μA	Ee=1mW /cm^2 λ_P=875nm
Reverse Light Current	I_L	4.2	6.5	---	μA	Ee=1mW /cm^2 λ_P=875nm V_R=5V
Dark Reverse Current	I_D	---	---	10	nA	Ee=0mW /cm^2 V_R=10V
Reverse Breakdown Voltage	B_{VR}	32	170	---	V	Ee=0mW /cm^2 I_R=100 μA
Rise Time	t_r	---	10	---	nS	V_R=5V R_L=1000Ω
Fall Time	t_f	---	10	---		
View Angle	$2\theta_{1/2}$	---	130	---	deg	V_R=5V

Typical Electrical/Optical/Characteristics Curves

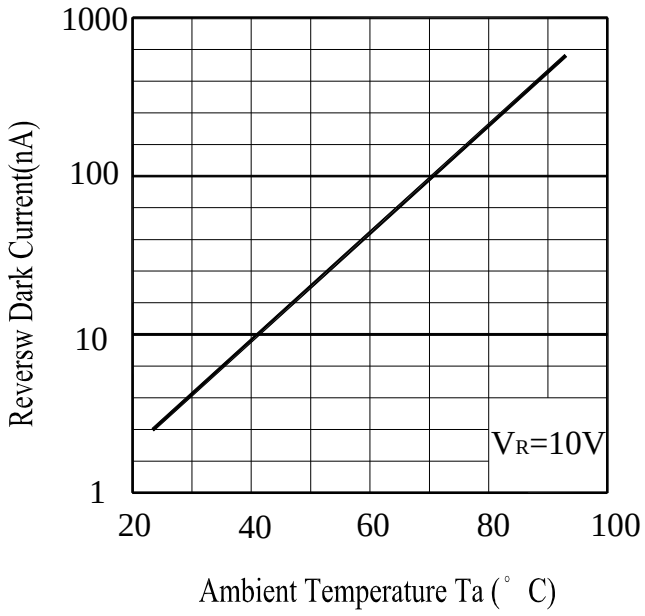
Power Dissipation vs. Ambient Temperature



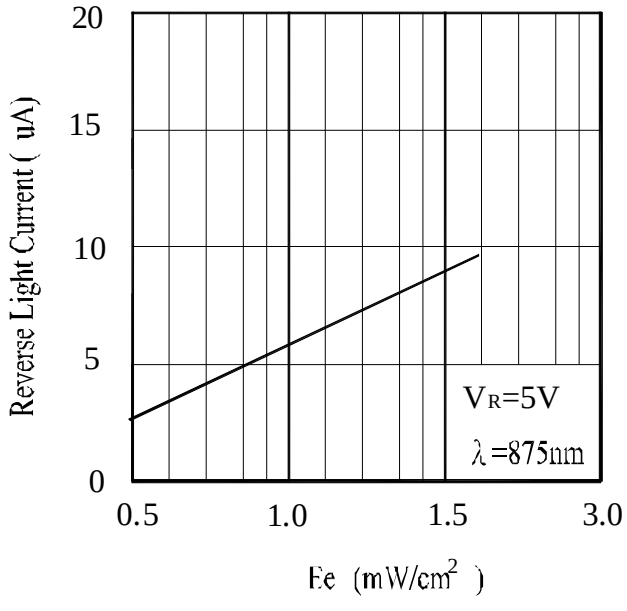
Spectral Sensitivity



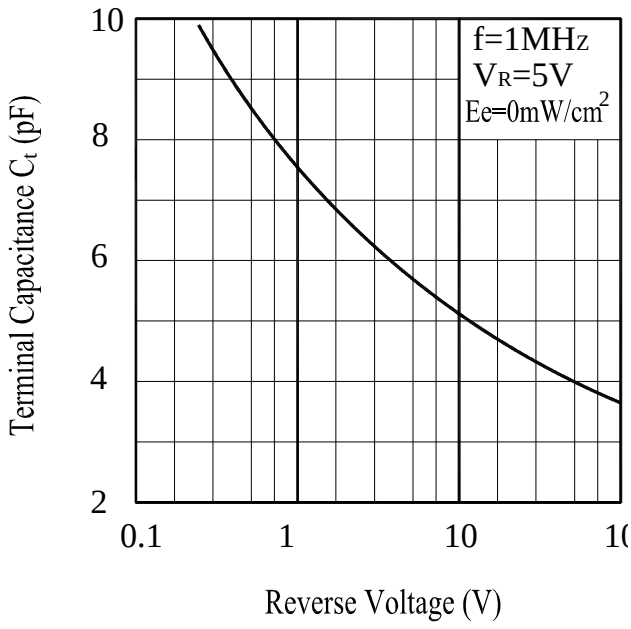
Dark Current vs. Ambient Temperature



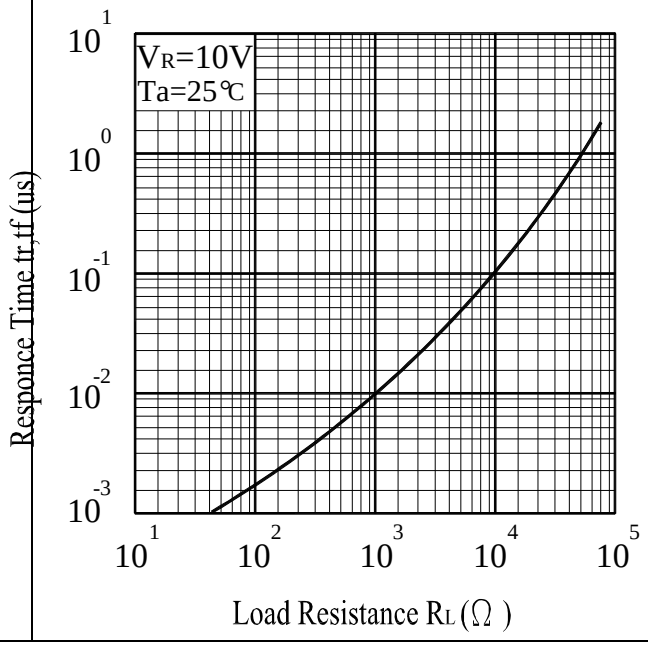
Reverse Light Current vs. Ee



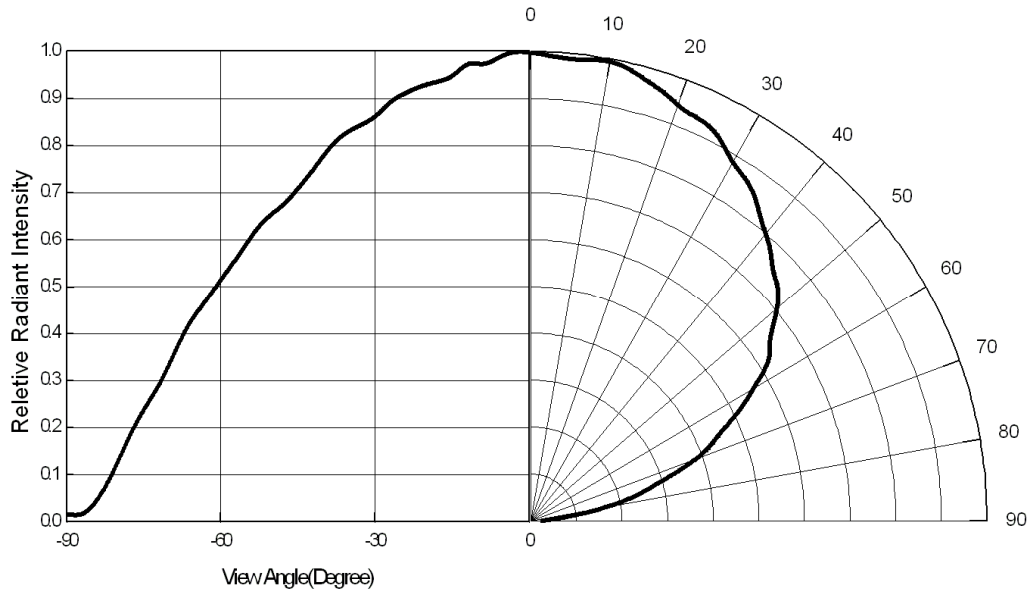
Terminal Capacitance vs. Reverse Voltage



Response Time vs. Load Resistance



Relative Light Current vs. Angular Displacement



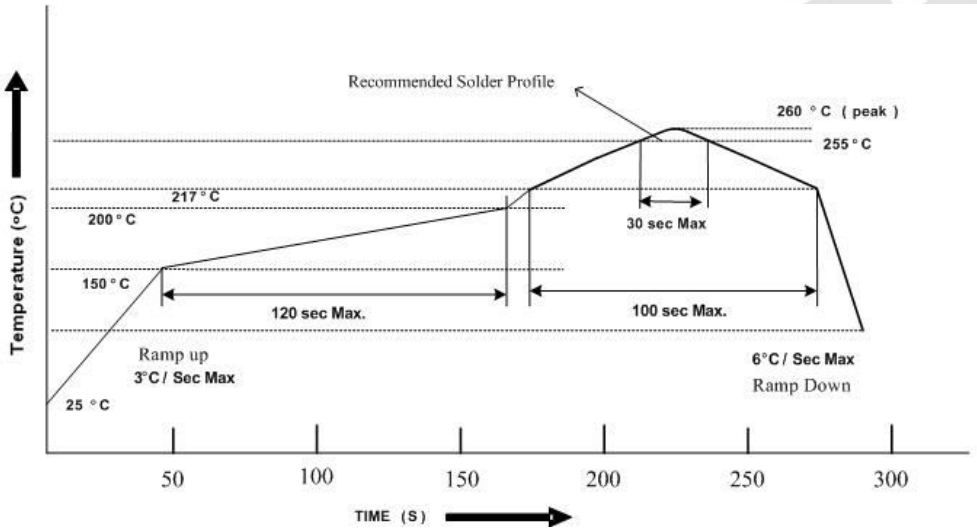
● Precautions For Use

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 The LEDs should be used within a year.
   2.4 After opening the package, the LEDs should be kept at 30℃ or less and 60%RH or less.
   2.5 The LEDs should be used within 168 hours (7 days) after opening the package
   2.6 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 Min 24 hours.

3. Soldering Condition
   3.1 Pb-free solder temperature profile



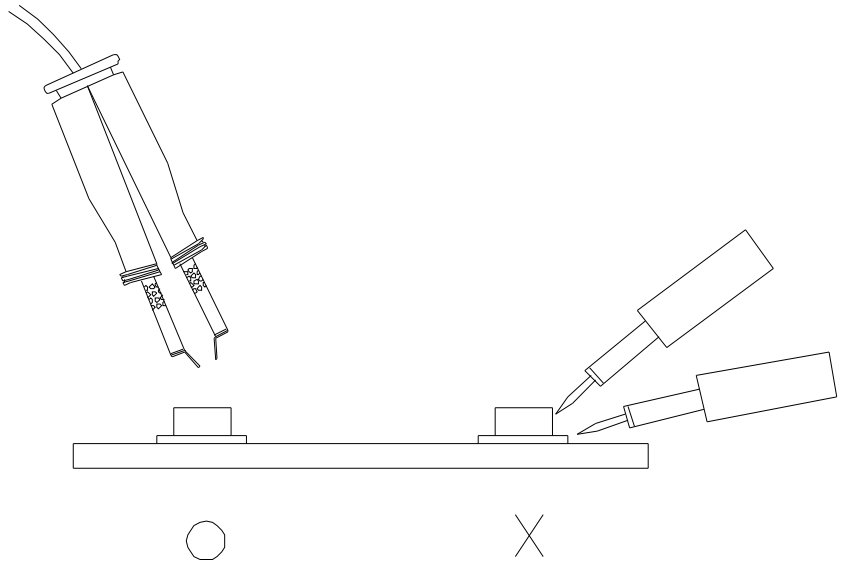
   3.2 Reflow soldering should not be done more than two times.
   3.3 When soldering, do not put stress on the LEDs during heating.
   3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

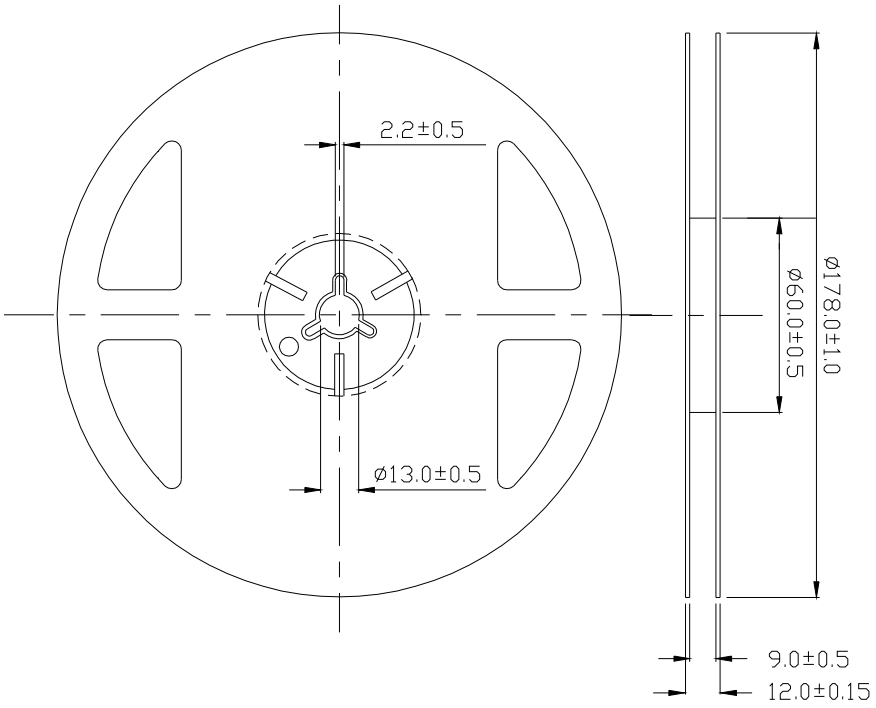
Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

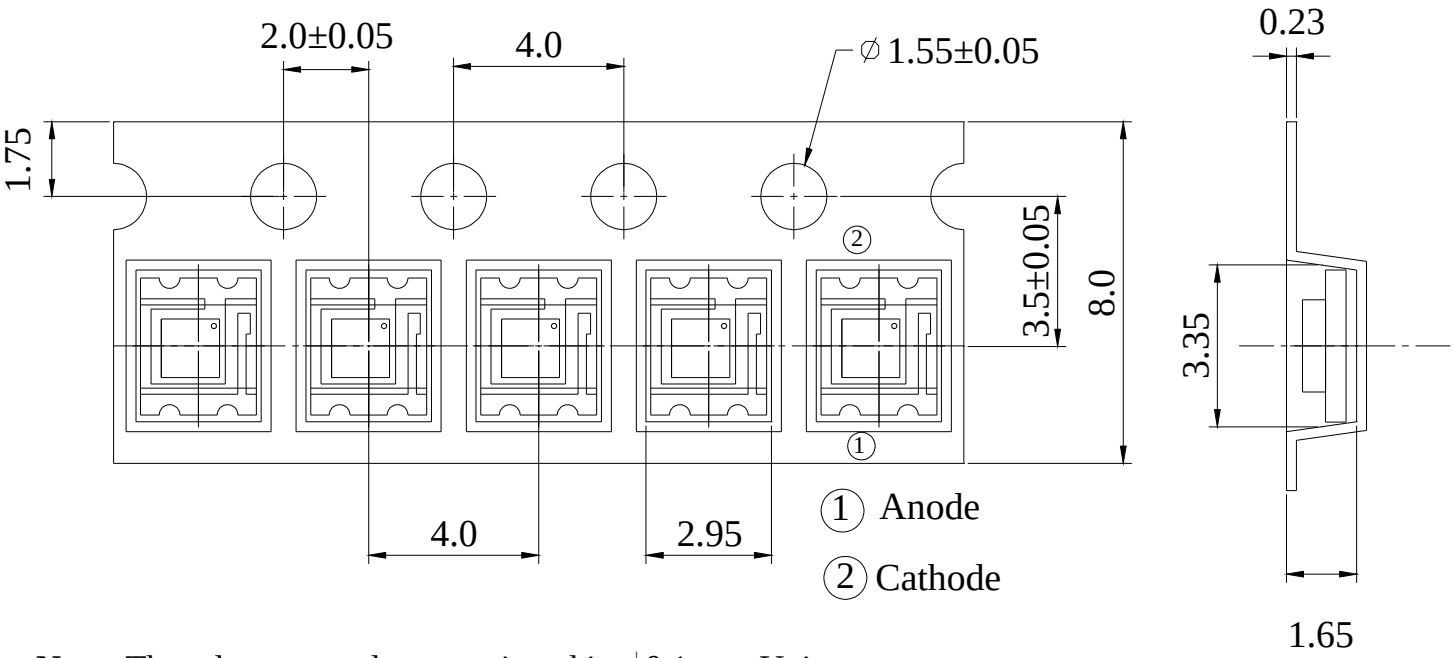


Package Dimensions



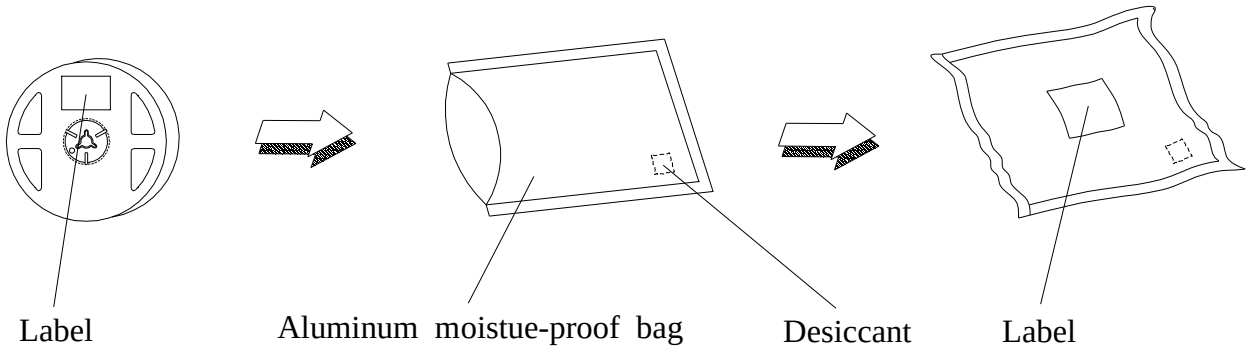
Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

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

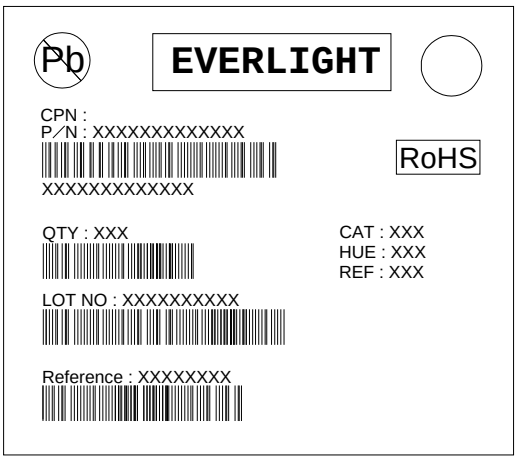


Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Packing Procedure



Label Form Specification



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.
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