

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.

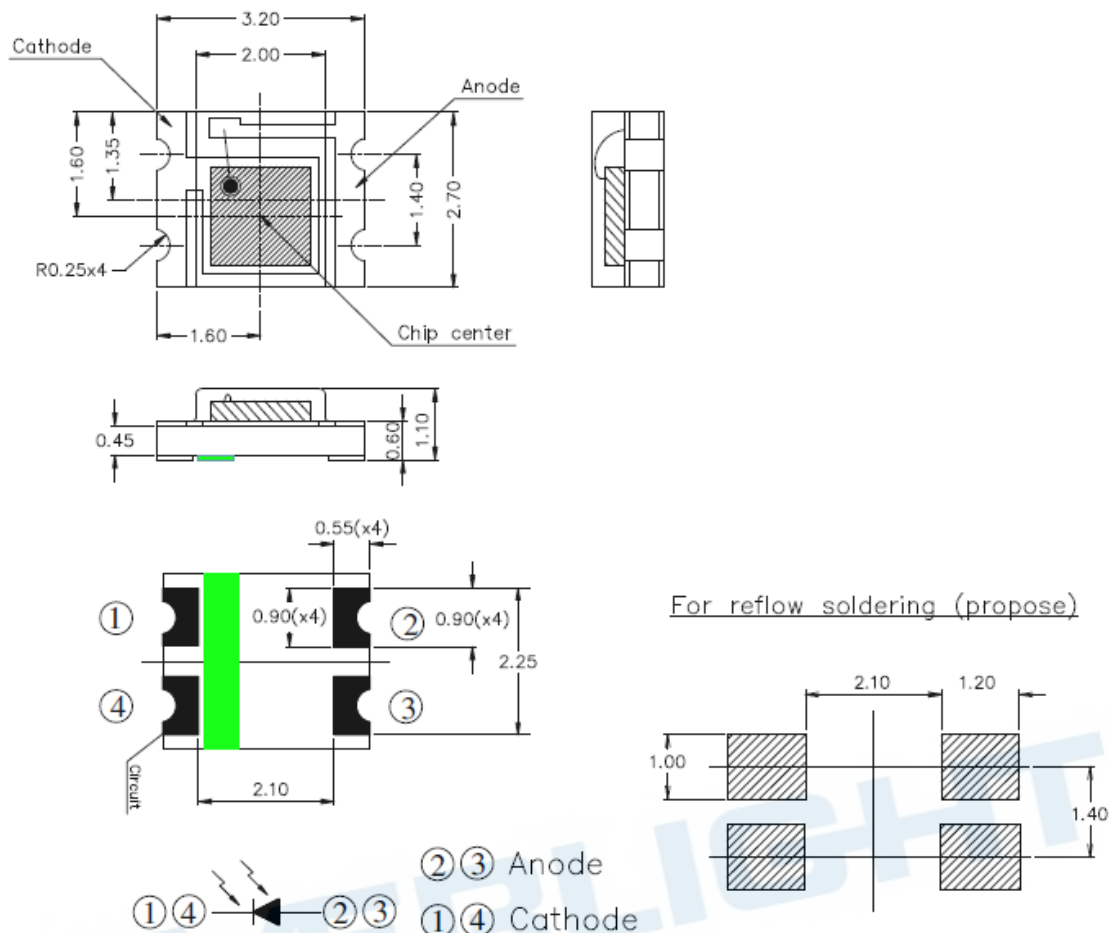
Applications

- 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 $\pm 0.1\text{mm}$

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

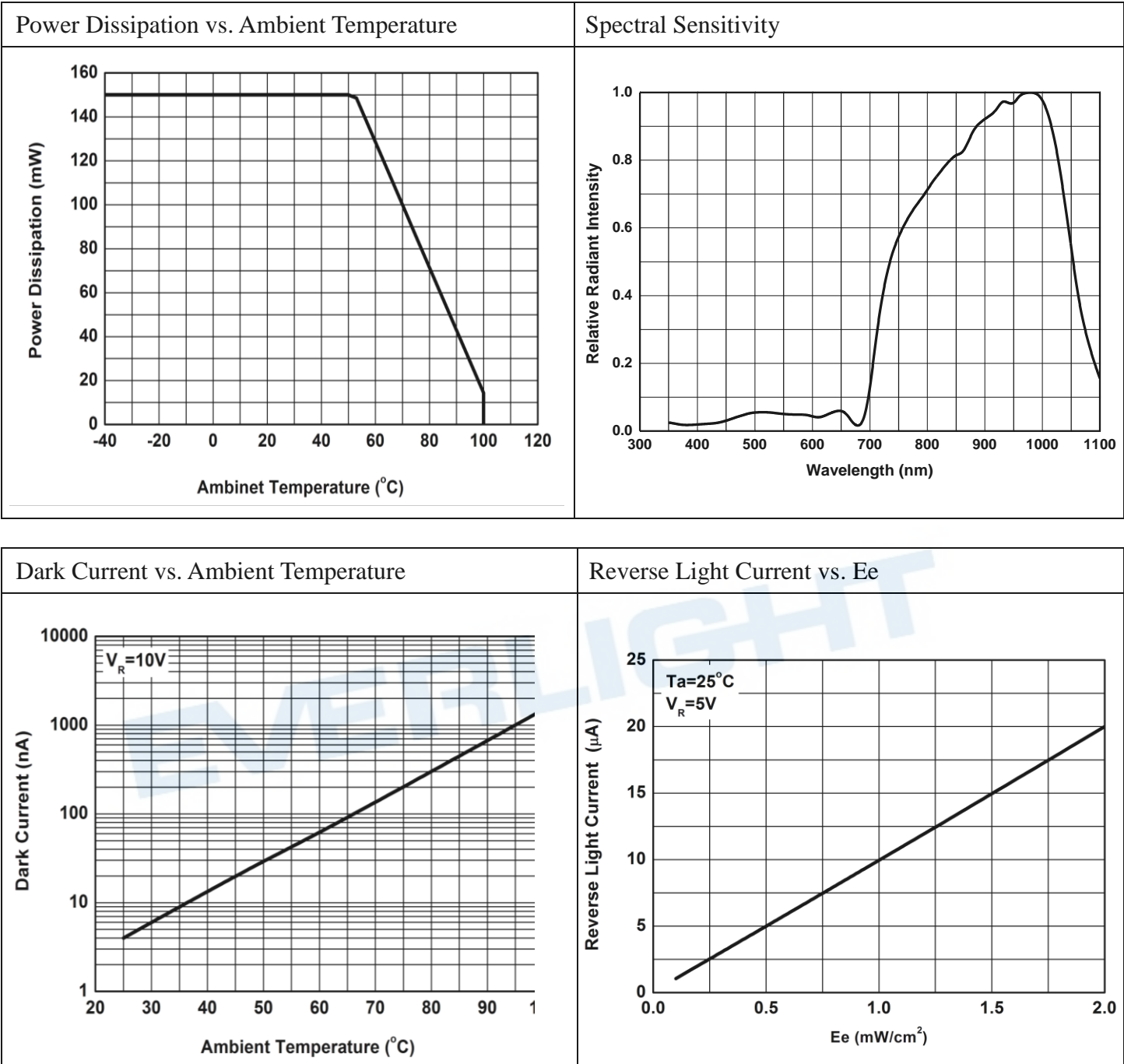
Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	32	V
Operating Temperature	T_{opr}	$-40 \sim +100$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-40 \sim +100$	$^\circ\text{C}$
Soldering Temperature *1	T_{sol}	260	$^\circ\text{C}$
Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature	P_c	150	mW
ESD HMB Level	HMB	Min.2000	V

Notes: *1:Soldering time ≤ 5 seconds.

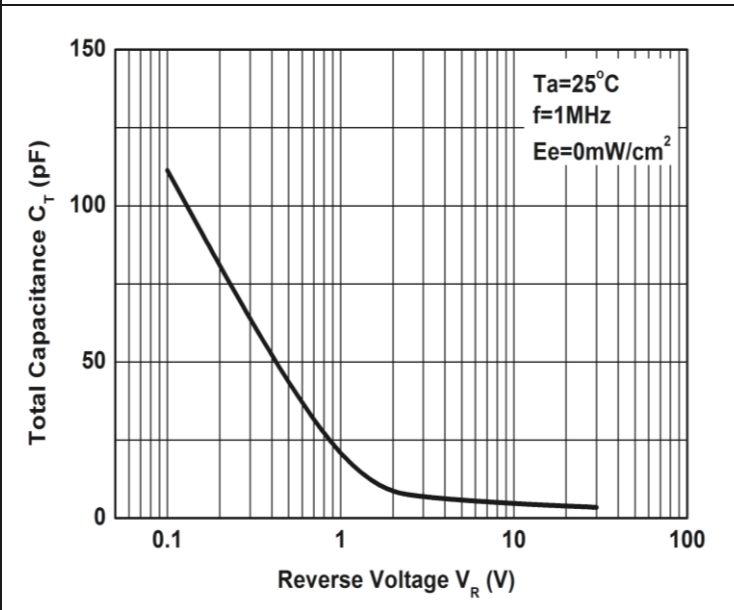
Electro-Optical Characteristics (Ta=25°C unless specified otherwise)

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=1mW /cm ² λ_P =940nm
Short-Circuit Current	I_{SC}	4.0	--	--	μA	Ee=1mW /cm ² λ_P =940nm
Reverse Light Current	I_L	4.2	10.0	--	μA	Ee=1mW /cm ² λ_P =940nm 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 =100μA
Total Capacitance	C_T	--	6.0	--	pF	Ee=0mW/cm ² f=1MHZ V_R =3V
View Angle	$2\theta_{1/2}$	--	130	--	deg	V_R =5V

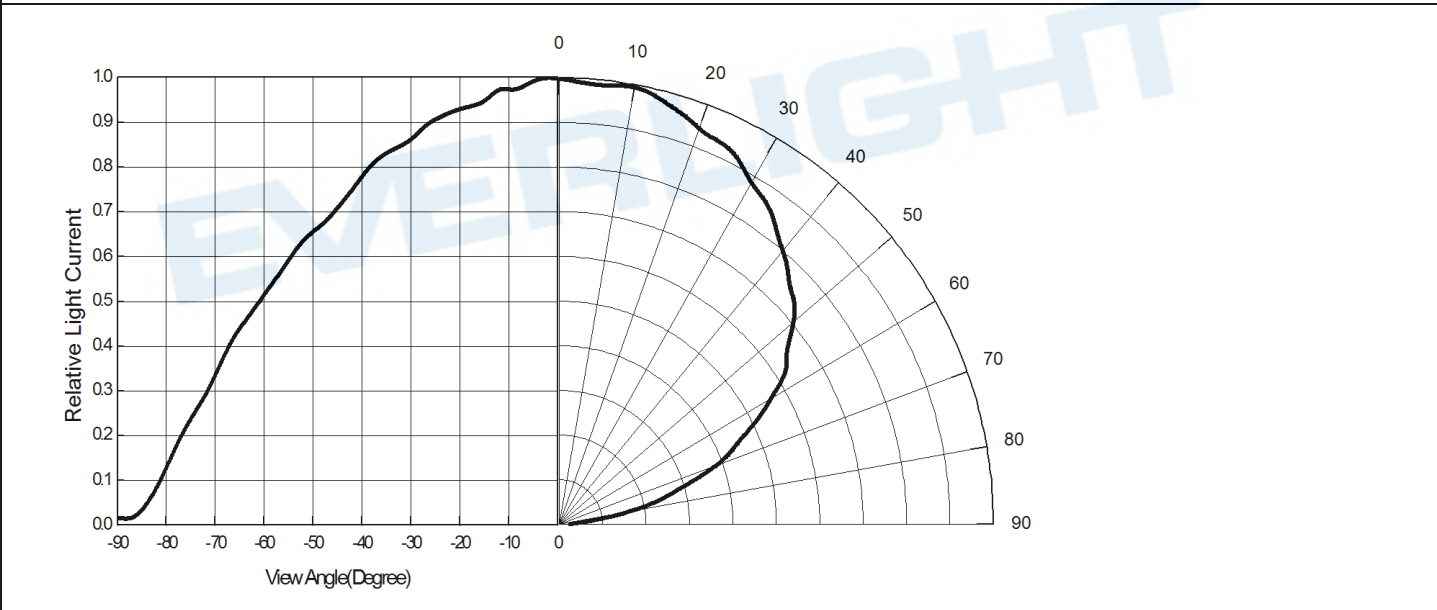
Typical Electrical/Optical/Characteristics Curves



Terminal Capacitance vs. Reverse Voltage



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 Photodiode should be kept at 30°C or less and 90%RH or less.

2.3 The Photodiode should be used within a year.

2.4 After opening the package, the Photodiode should be kept at 30°C or less and 60%RH or less.

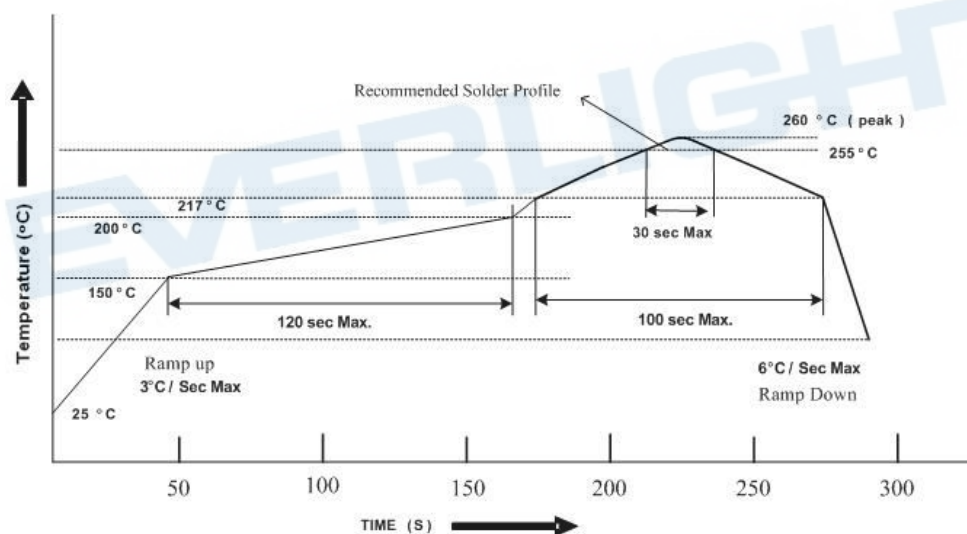
2.5 The Photodiode should be used within a year (12 months) after opening the package

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

Baking treatment : 60±5°C 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 Photodiode during heating.

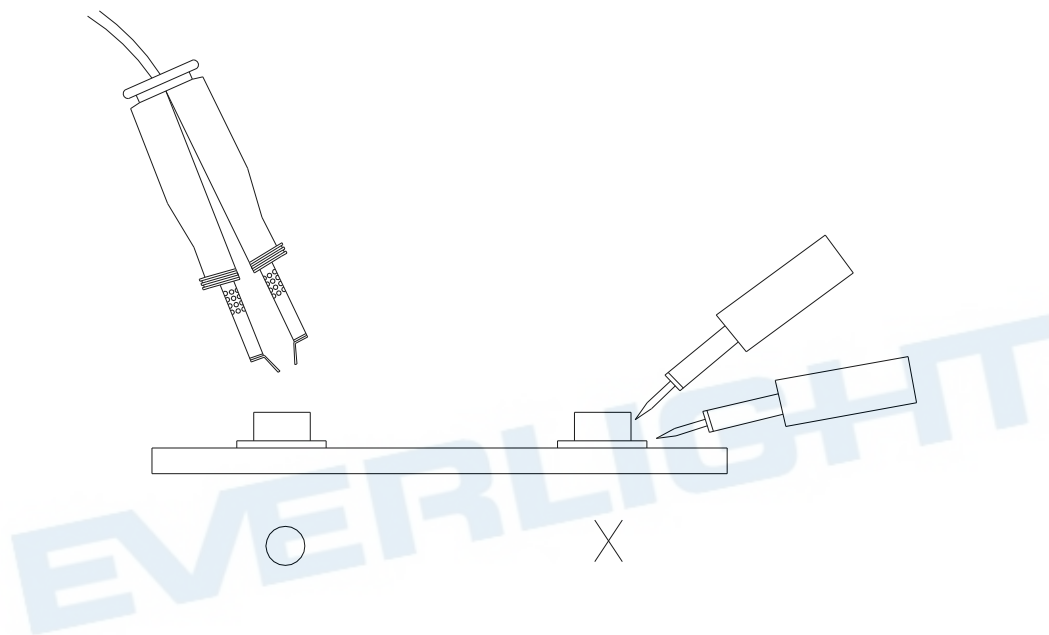
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C 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 Photodiode 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 Photodiode will or will not be damaged by repairing.

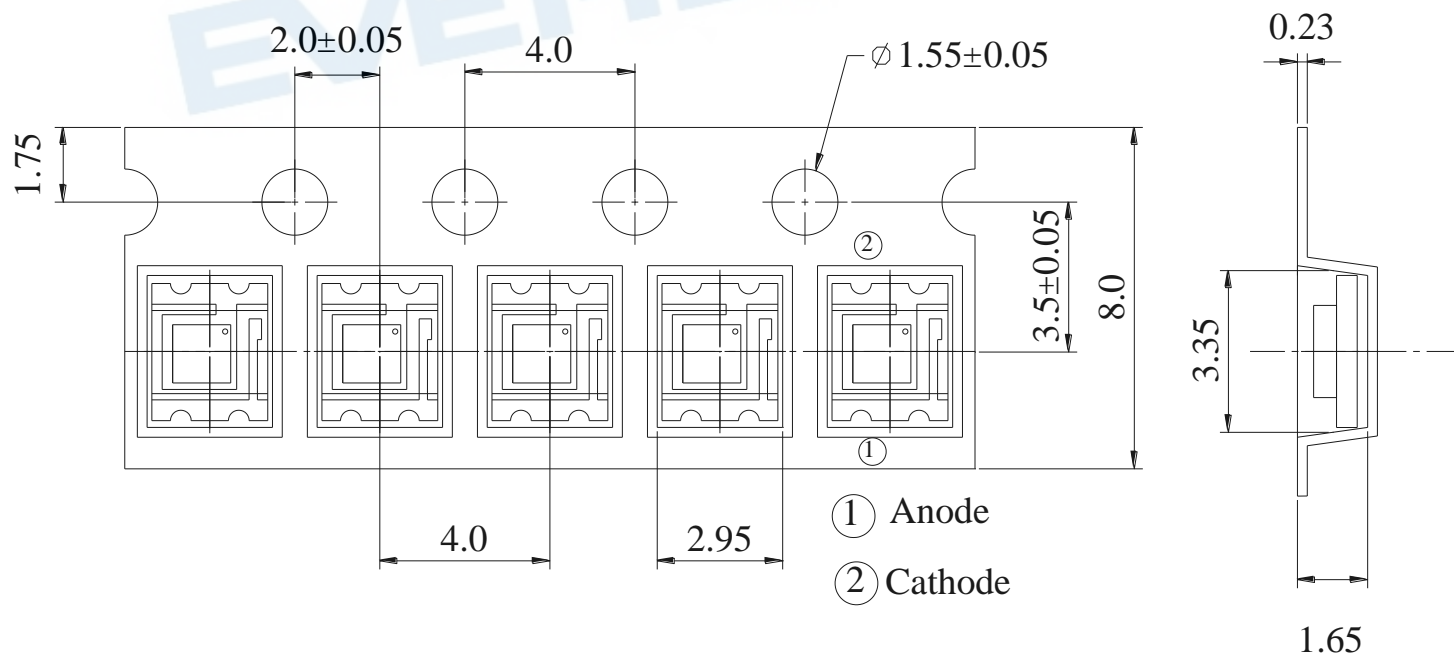


Technical drawing of a circular mechanical part, likely a flange or end plate, showing dimensions in millimeters (mm).

The drawing includes the following dimensions:

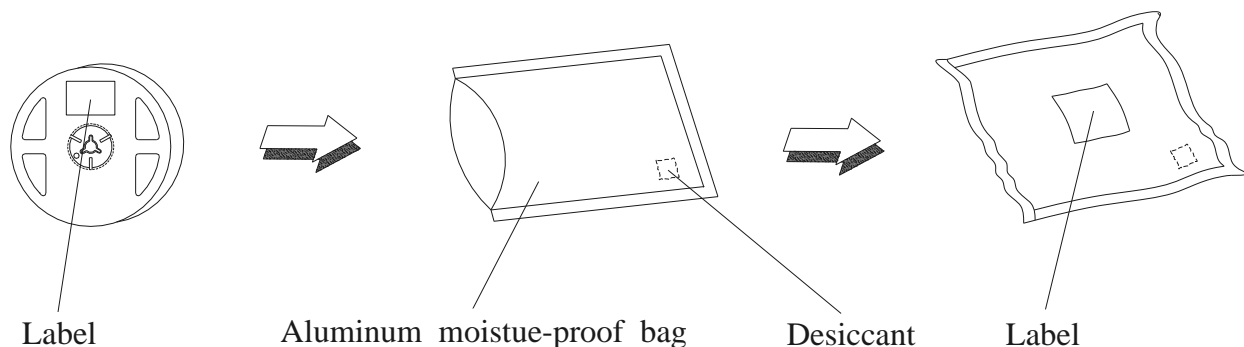
- Overall outer diameter: $\phi 178.0 \pm 1.0$
- Inner circular feature diameter: $\phi 60.0 \pm 0.5$
- Distance from the center to the edge of the inner circular feature: 2.2 ± 0.5
- Distance from the center to the edge of the outer circular feature: $\phi 13.0 \pm 0.5$
- Thickness of the part: 9.0 ± 0.5
- Distance from the center to the edge of the part: 12.0 ± 0.15

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

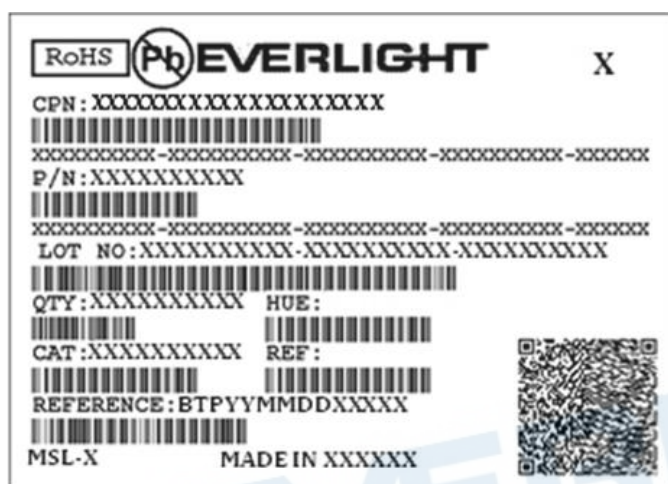


Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$,Unit = mm

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

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3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
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