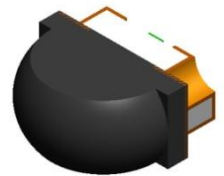


### Technical Data Sheet 1.6×0.8mm Package Infrared LED HIR83-01B/TR8

#### Features

- Peak wavelength  $\lambda_p=850\text{nm}$
- Low forward voltage
- 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

- HIR83-01B/TR8 is an infrared emitting diode in miniature SMD package which is molded in a black plastic with semicircle and top view lens.
- The device is spectrally matched with silicon photodiode and phototransistor.

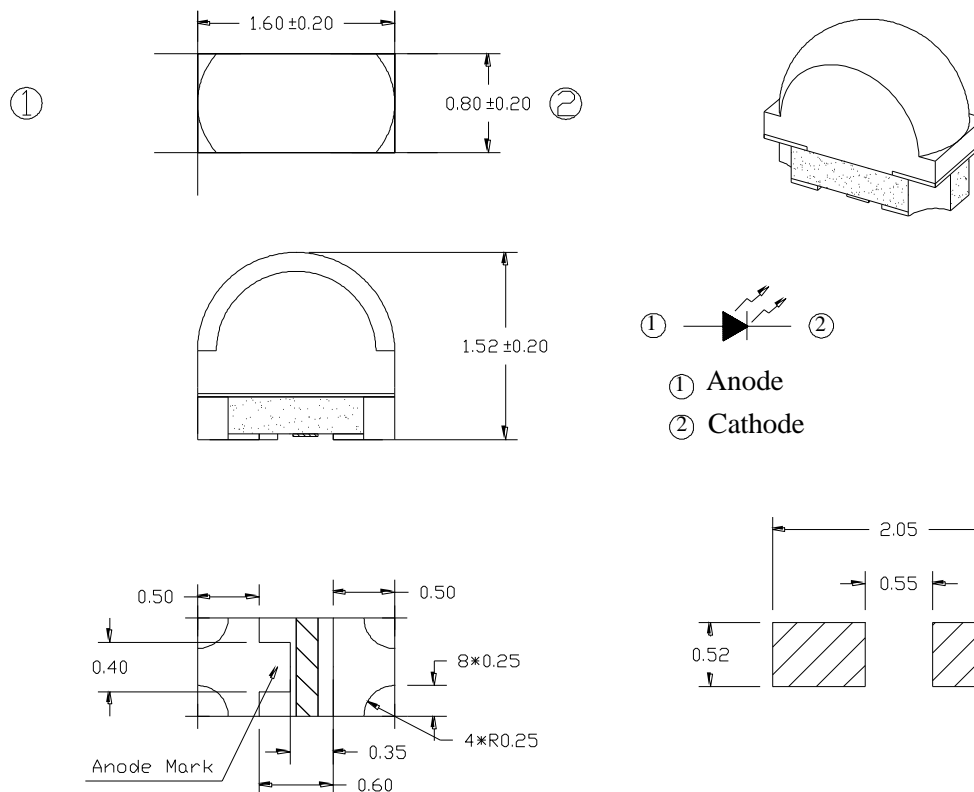
#### Applications

- Infrared applied system

#### Device Selection Guide

Device No.	Chip Material	Lens Color
HIR83-01B/TR8	GaAlAs	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
Continuous Forward Current	$I_F$	65	mA
Peak Forward Current *1	$I_{FP}$	1.0	A
Reverse Voltage	$V_R$	5	V
Operating Temperature	$T_{opr}$	$-40 \sim +100$	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	$-40 \sim +100$	$^\circ\text{C}$
Soldering Temperature *2	$T_{sol}$	260	$^\circ\text{C}$
Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature	$P_d$	100	mW

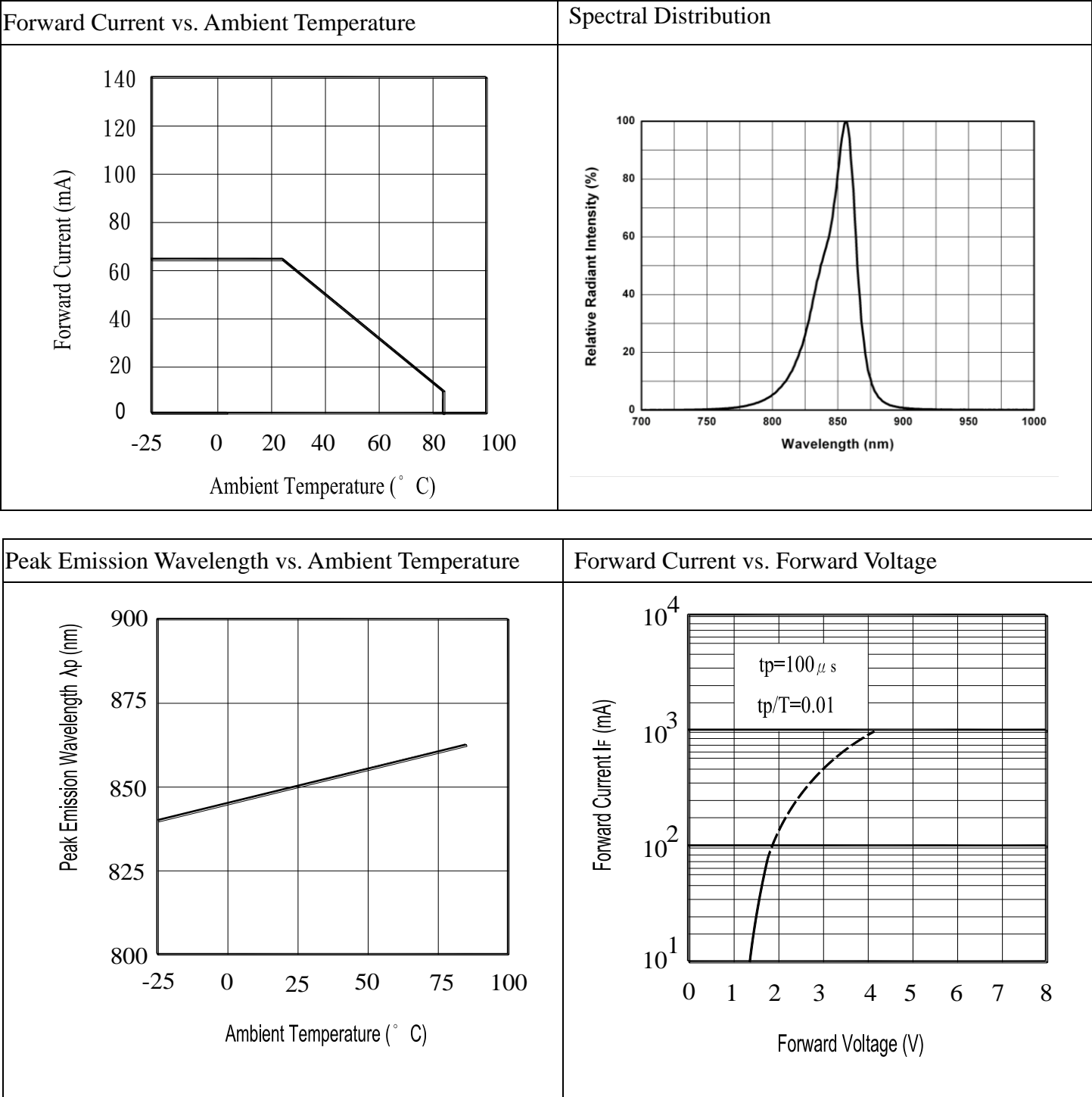
**Notes:** \*1: $I_{FP}$  Conditions--Pulse Width  $\leq 100\mu\text{s}$  and Duty  $\leq 1\%$ .

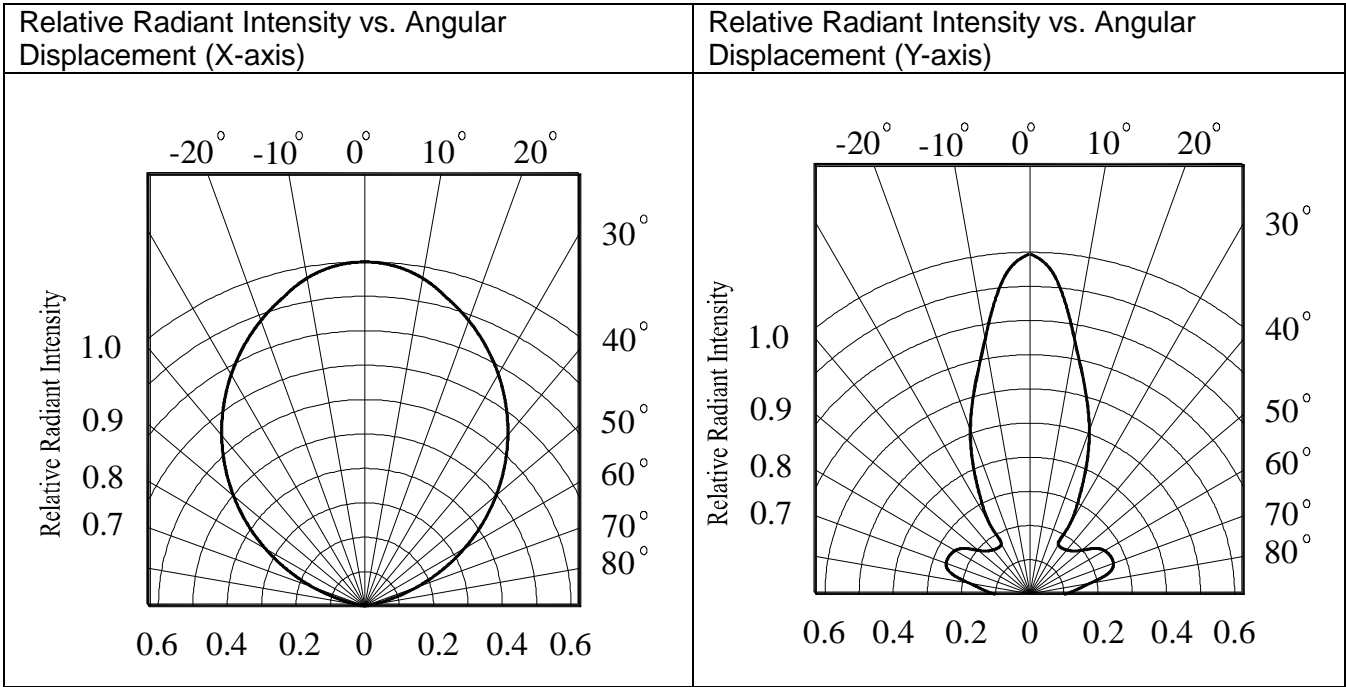
\*2:Soldering time  $\leq 5$  seconds.

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	I <sub>e</sub>	2.0	5.0	--	mW /sr	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	840	850	870	nm	I <sub>F</sub> =100mA
Spectral Bandwidth	Δλ	--	30	--	nm	I <sub>F</sub> =100mA
Forward Voltage	V <sub>F</sub>	--	1.4	1.7	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	--	--	10	μA	V <sub>R</sub> =5V
Rise time	t <sub>r</sub>	--	16	--	ns	I <sub>F</sub> =20mA
Fall time	t <sub>f</sub>	--	30	--	ns	I <sub>F</sub> =20mA
View Angle	2θ1/2	--	100	--	deg	I <sub>F</sub> =20mA
		--	40	--		

Typical Electrical/Optical/Characteristics Curves for IR





## ● 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°C 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°C or less and 70%RH or less.

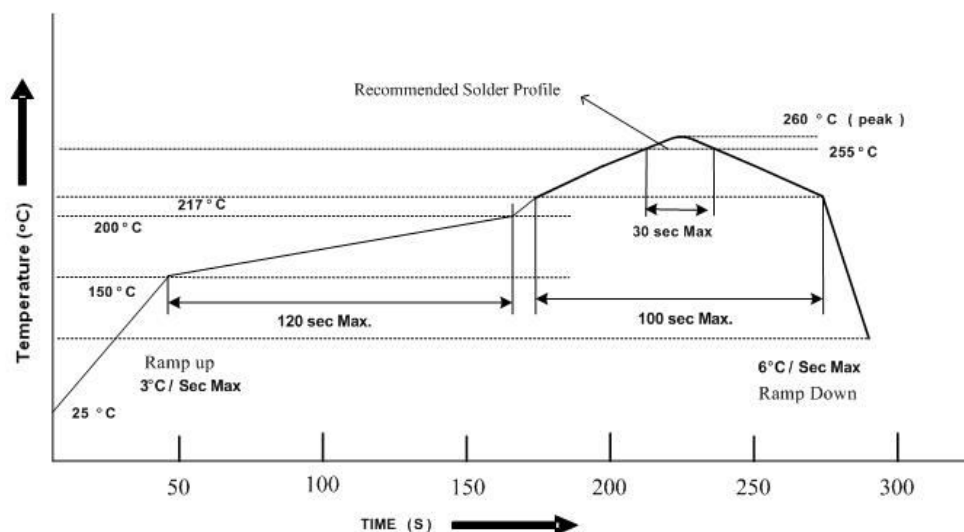
2.5 The LEDs should be used within 168 hours (7 days) after opening the package

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°C 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.

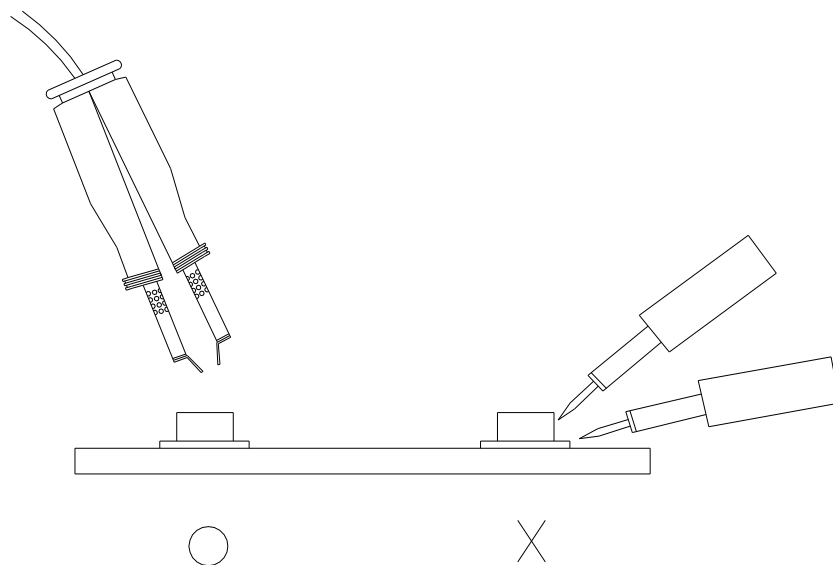
3.4 After soldering, do not warp the circuit board.

#### 4. Soldering Iron

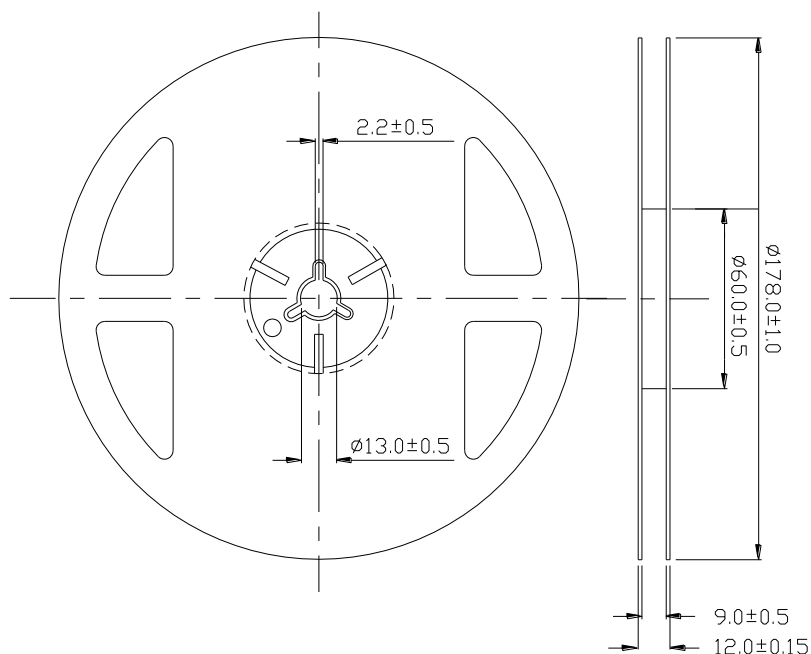
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

#### 5. Repairing

Repair should not be done after the 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.

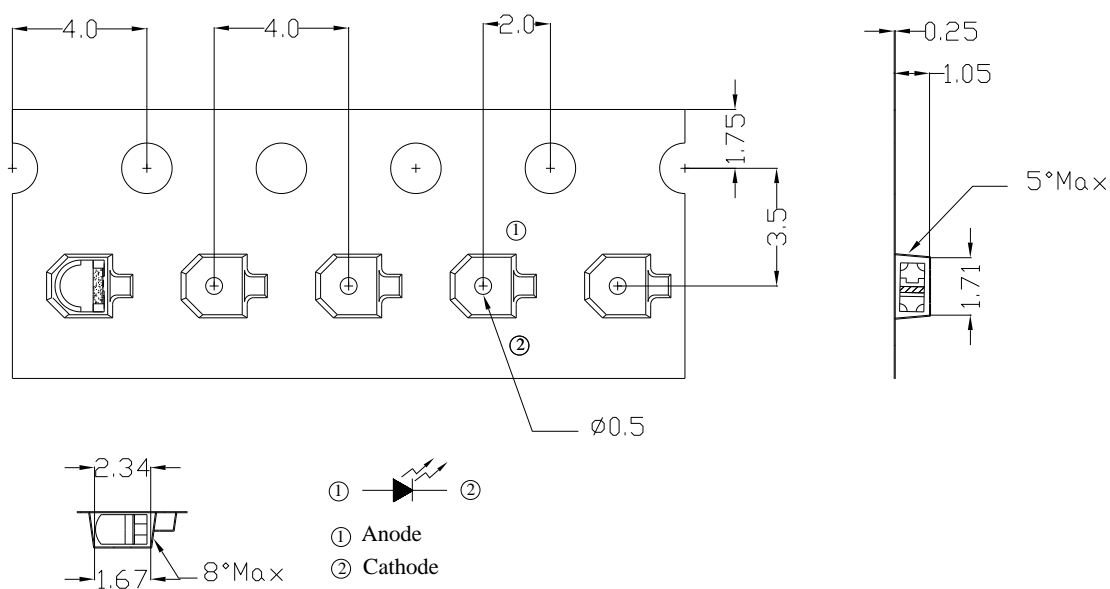


## Package Dimensions



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

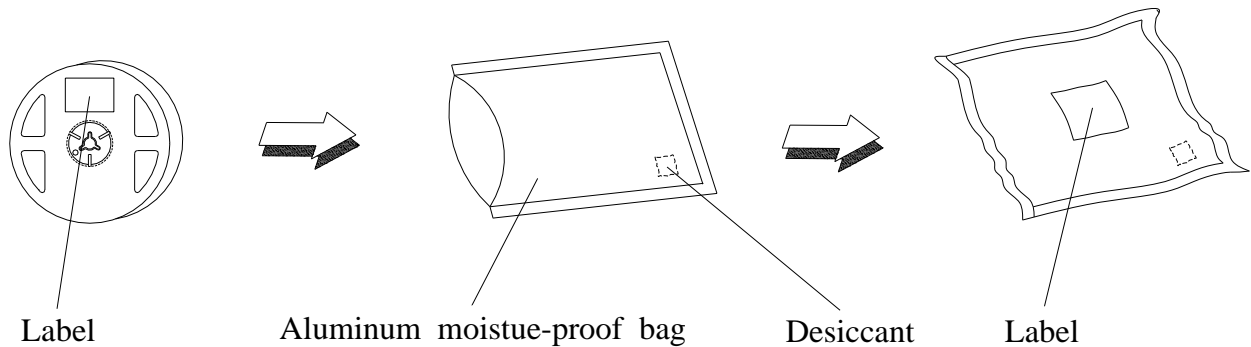
### 2. Carrier Tape Dimensions:(Quantity: 2000pcs/reel)



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



## Packing Procedure



## Label Form Specification

RoHS	<b>(Pb)</b>	<b>EVERLIGHT</b>	<b>X</b>
CPN : XXXXXXXXXXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX			
P/N : XXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX			
LOT NO : XXXXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX			
QTY : XXXXXXXXXXXX HUE :			
CAT : XXXXXXXXXXXX REF :			
REFERENCE : BTPYYMMDDXXXXXX			
MSL-X MADE IN XXXXXX			

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

## 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 (12) 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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