

## Chip Phototransistor with spherical top view Lens

### PT12-21B/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

- PT12-21B/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.

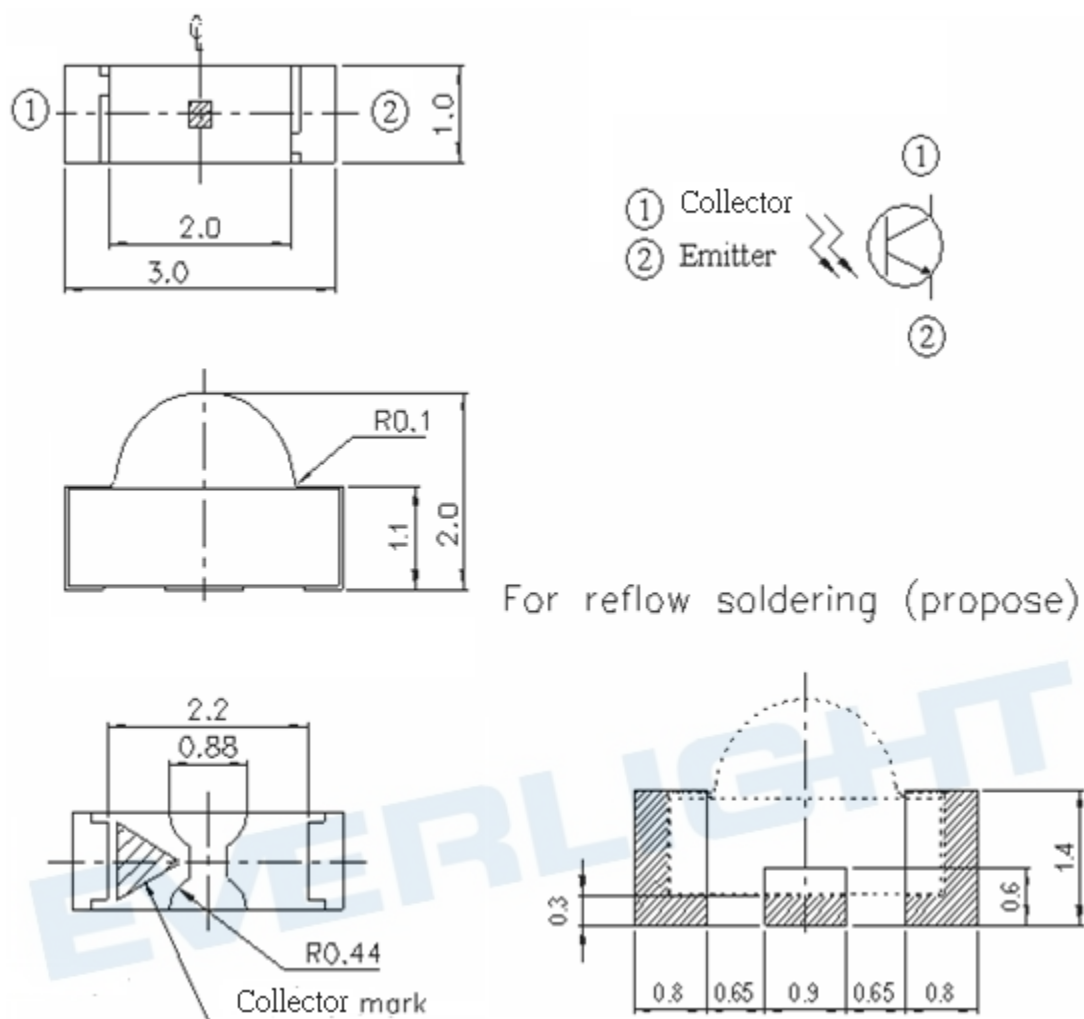
#### Applications

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

#### Device Selection Guide

Part Category	Chip Material	Resin Color
PT	Silicon	Black

## Package Dimensions



### Notes:

1. All dimensions are in millimeters.
2. Tolerances unless dimensions  $\pm 0.1\text{mm}$ .
3. Suggested pad dimension is just for reference only.  
Please modify the pad dimension based on individual need.

### Absolute Maximum Ratings (Ta=25°C)

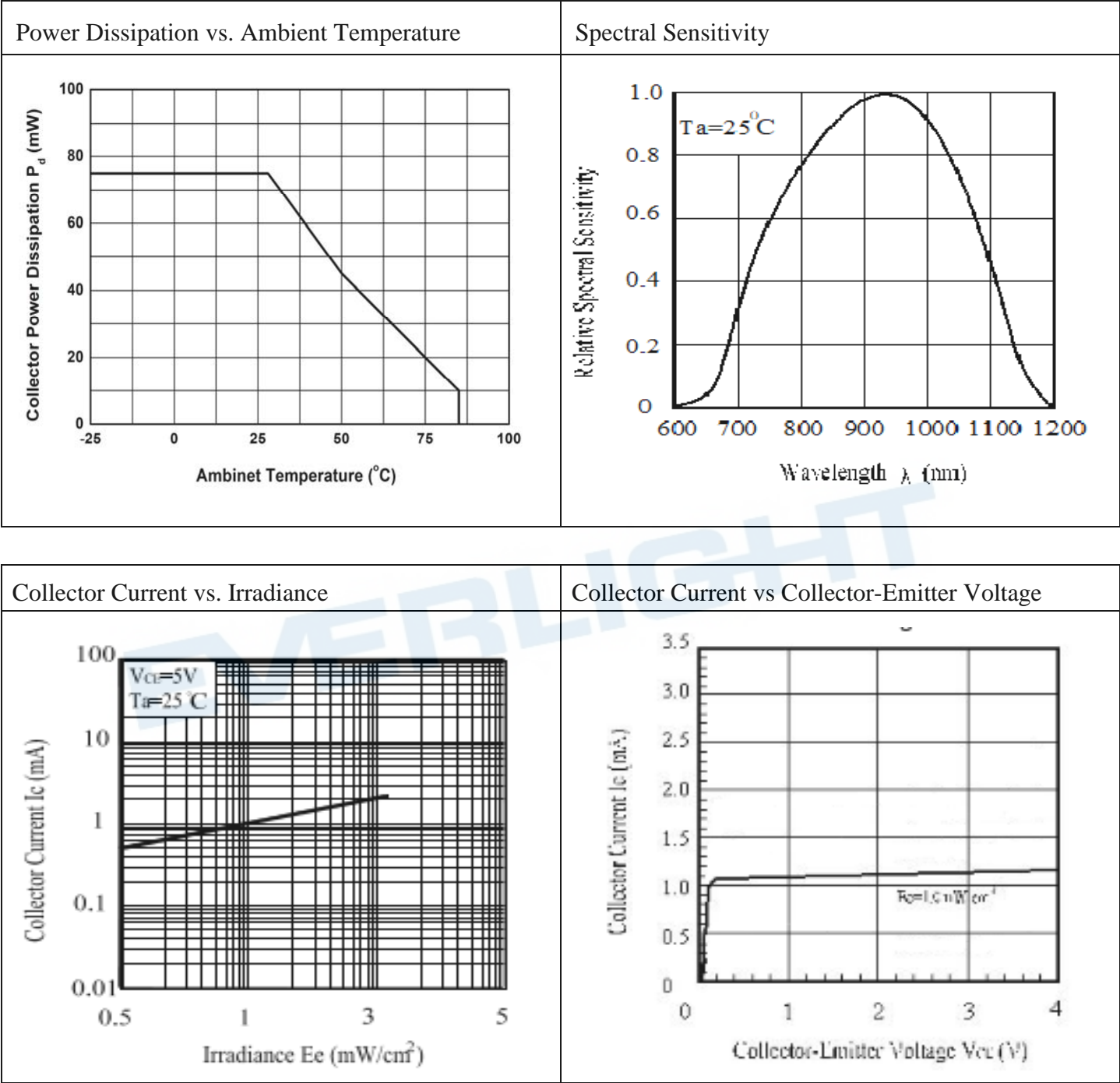
Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	$V_{CEO}$	30	V
Emitter-Collector-Voltage	$V_{ECO}$	5	V
Collector Current	$I_C$	50	mA
Operating Temperature	$T_{opr}$	-25 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +85	°C
Soldering Temperature *1	$T_{sol}$	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	$P_C$	75	mW

Notes: \*1:Soldering time  $\leq$  5 seconds.

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	---	730	---	1100	nm
Wavelength Of Peak Sensitivity	$\lambda_P$	---	---	940	---	nm
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=100\mu A$ $E_e=0mW/cm^2$	30	---	---	V
Emitter-Collector Breakdown Voltage	$BV_{ECO}$	$I_E=100\mu A$ $E_e=0mW/cm^2$	5	---	---	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2mA$ $E_e=1mW/cm^2$	0.1	---	0.4	V
Collector Dark Current	$I_{CEO}$	$V_{CE}=20V$ $E_e=0mW/cm^2$	---	---	100	nA
On State Collector Current	$I_{C(ON)}$	$V_{CE}=5V$ $E_e=1mW/cm^2$	0.30	---	5.07	mA

Typical Electro-Optical Characteristics Curves for PT



## 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 After opening the package: The LEDs should be kept at 30°C or less and 60%RH or less.

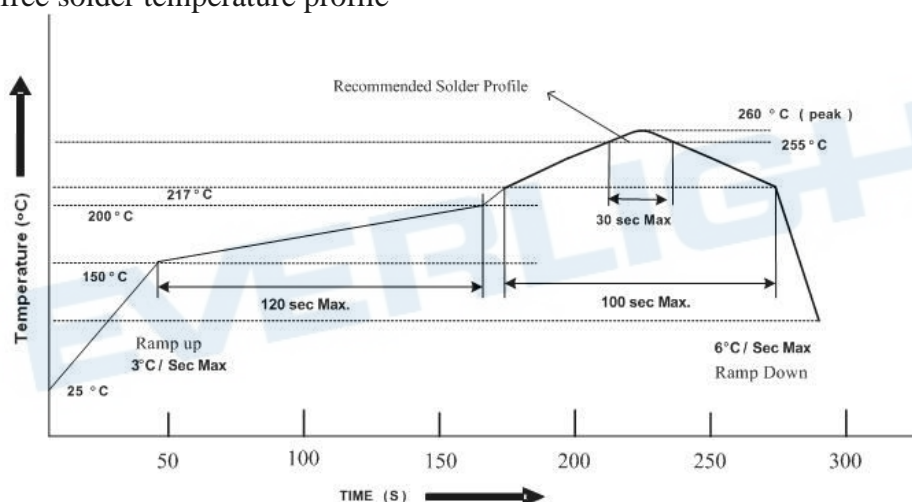
2.3 The LEDs should be used within 168 hours (7days) after opening the package.

2.4 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

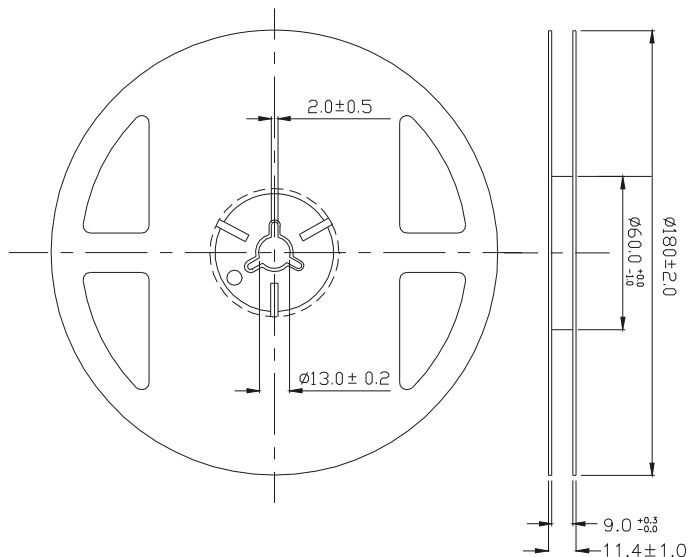


3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the Phototransistor during heating.

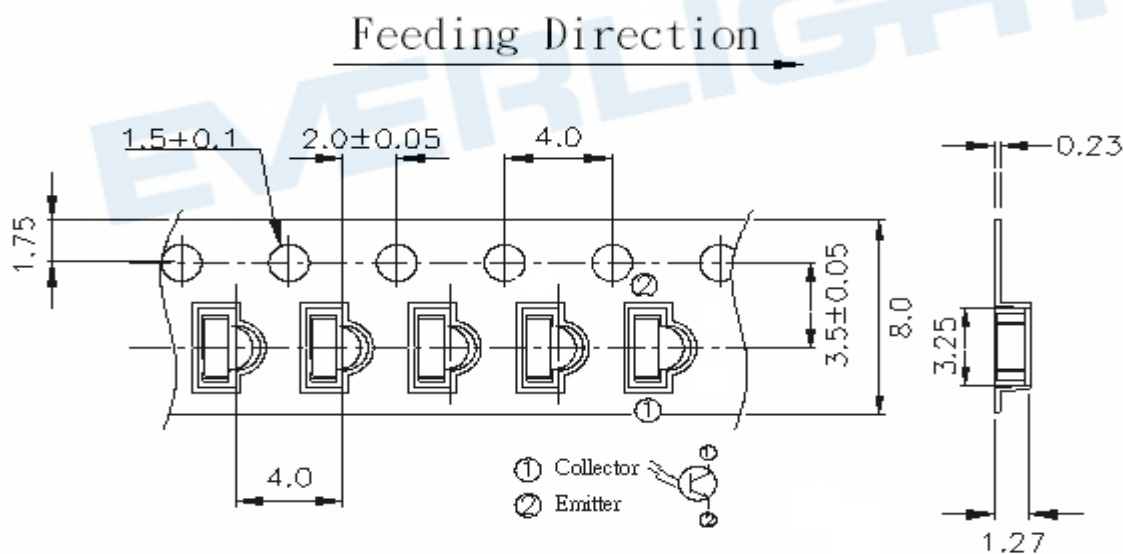
3.4 After soldering, do not warp the circuit board.

## Package Dimensions



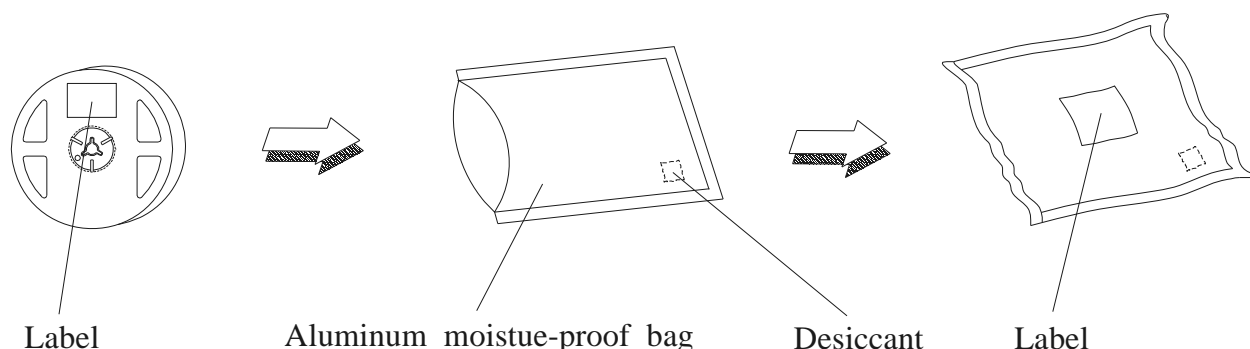
**Note:** The tolerances unless mentioned are  $\pm 0.1$ mm, Unit: mm

**Carrier Taping Dimensions: (Quantity: 2000PCS/Reel)**




**Note:** The tolerances unless mentioned are  $\pm 0.1$ mm, Unit: mm

## Packing Procedure



## Label Form Specification

RoHS		<b>EVERLIGHT</b>	
CPN :			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
P/N :			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
LOT NO :			
QTY :			
CAT :		HUE :	
REFERENCE :		REF :	



CPN: Customer's Production Number  
P/N : Production Number  
QTY: Packing Quantity  
CAT: Ranks  
HUE: Peak Wavelength  
REF: Reference  
LOT No: Lot Number  
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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