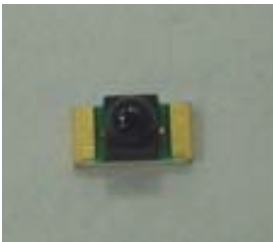


## 1.6mm Round Subminiature Reverse Package Phototransistor PT26-21B/TR8



### 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)

### Descriptions

- PT26-21B/TR8 is a phototransistor in miniature SMD package which is molded in a black with spherical top view lens.  
The device is Spectrally matched to visible and infrared emitting diode.

### Applications

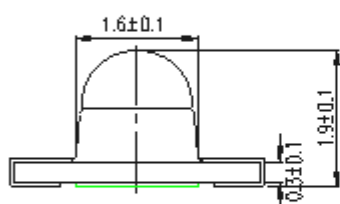
- Miniature switch
- Counters and sorter
- Position sensor
- Infrared applied system
- Encoder

### Device Selection Guide

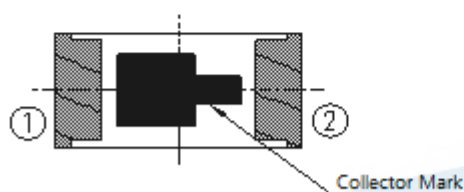
Part Category	Chip Material	Lens Color
PT	Silicon	Black



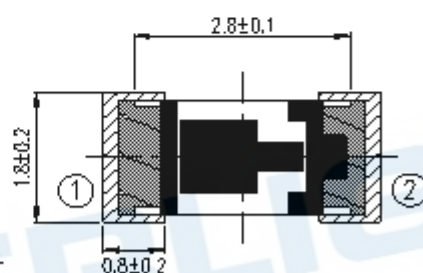
Top



Side



Bottom



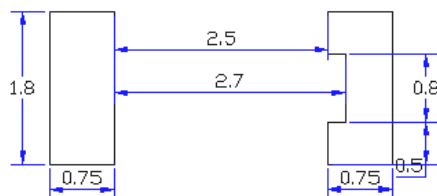
Recommend Sodering Pad

Suggested pad dimension is just for reference only.  
Please modify the pad dimension based on individual need.

2.Tolerances unless dimensions  $\pm 0.1\text{mm}$

3. Below is stencil design suggestion (Reference):

- Solder paste : Sn/Ag3.0/Cu0.5
- Stencil thickness : 0.10mm
- Stencil design drawing :



4.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 <sub>CEO</sub>	30	V
Emitter-Collector-Voltage	V <sub>ECO</sub>	5	V
Collector Current	I <sub>C</sub>	20	mA
Operating Temperature	T <sub>opr</sub>	-25 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	°C
Soldering Temperature *1	T <sub>sol</sub>	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	P <sub>d</sub>	75	mW

Notes: \*1: Soldering time ≤ 5 seconds.

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	λ <sub>0.5</sub>	---	730	---	1100	nm
Wavelength Of Peak Sensitivity	λ <sub>P</sub>	---	---	940	---	nm
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =100μA Ee=0mW/cm <sup>2</sup>	30	---	---	V
Emitter-Collector Breakdown Voltage	BV <sub>ECO</sub>	I <sub>E</sub> =100μA Ee=0mW/cm <sup>2</sup>	5	---	---	V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =2mA Ee=1mW/cm <sup>2</sup>	---	---	0.4	V
Collector Dark Current	I <sub>CEO</sub>	V <sub>CE</sub> =20V Ee=0mW/cm <sup>2</sup>	---	---	100	nA
On State Collector Current	I <sub>C(ON)</sub>	V <sub>CE</sub> =5V Ee=1mW/cm <sup>2</sup>	---	2.6	---	mA

## Typical Electro-Optical Characteristics Curves

Fig.1 Spectral Sensitivity

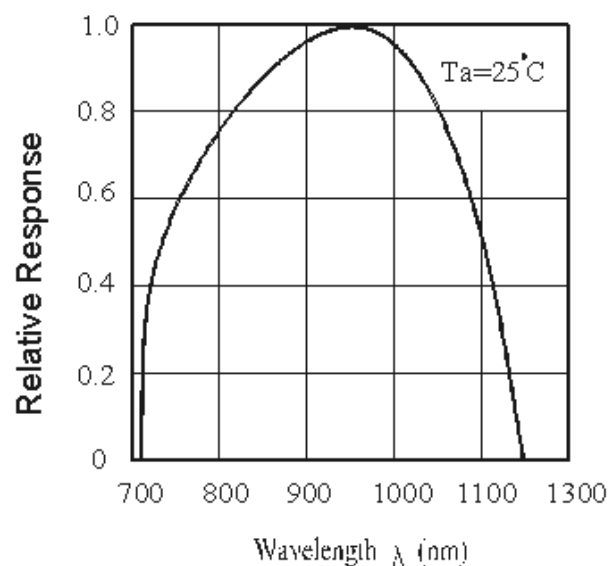


Fig.2 Collector Current vs. Irradiance

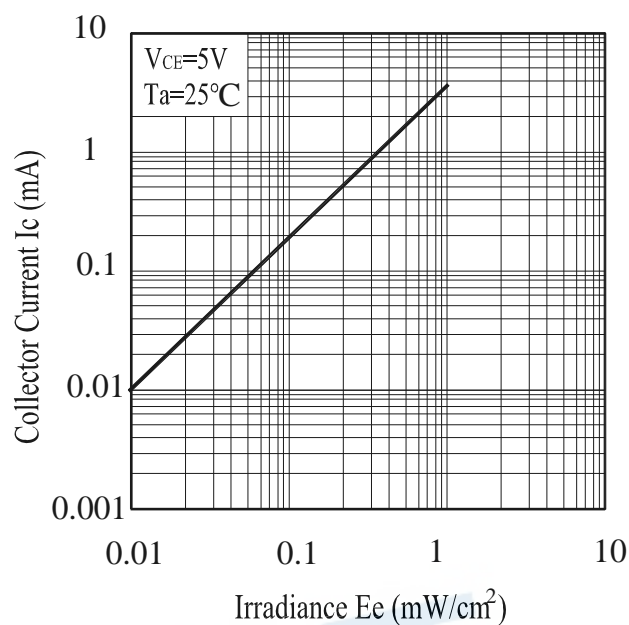
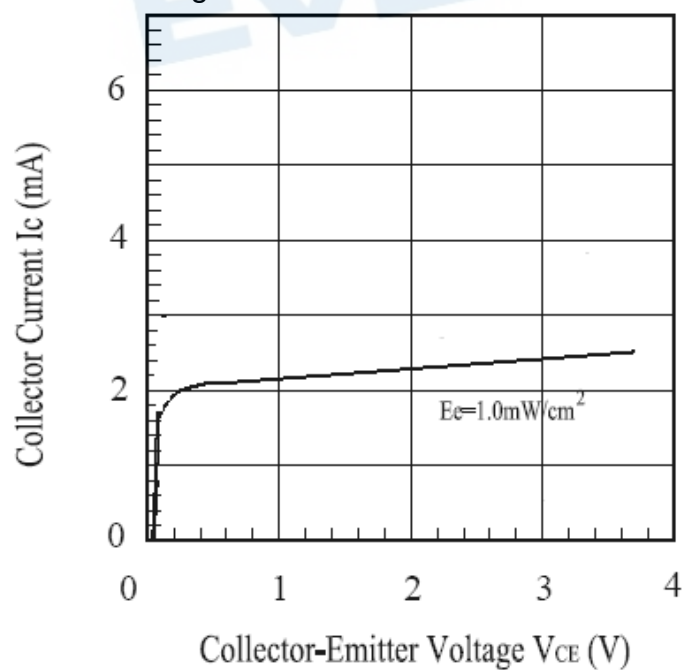


Fig.3 Collector Current vs. Collector-Emitter Voltage



## 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°C~30°C 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°C~30°C and  $\leq 60\%RH$ , and used within 168 hours (floor life). If unused Phototransistor remain, it should be stored in moisture proof packages.

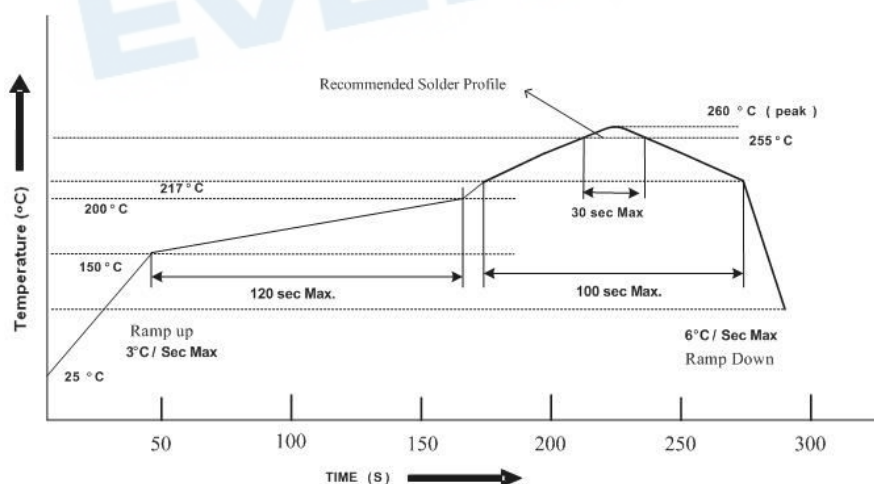
2.5 If the moisture absorbent material (desiccant material) has faded or unopened bag has exceeded the shelf life or devices (out of bag) have exceeded the floor life, baking treatment is required.

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°C  $\pm$  5°C and < 5 % RH (reeled/tubed/loose units)

### 3. Soldering Condition

#### 3.1 Lead 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.

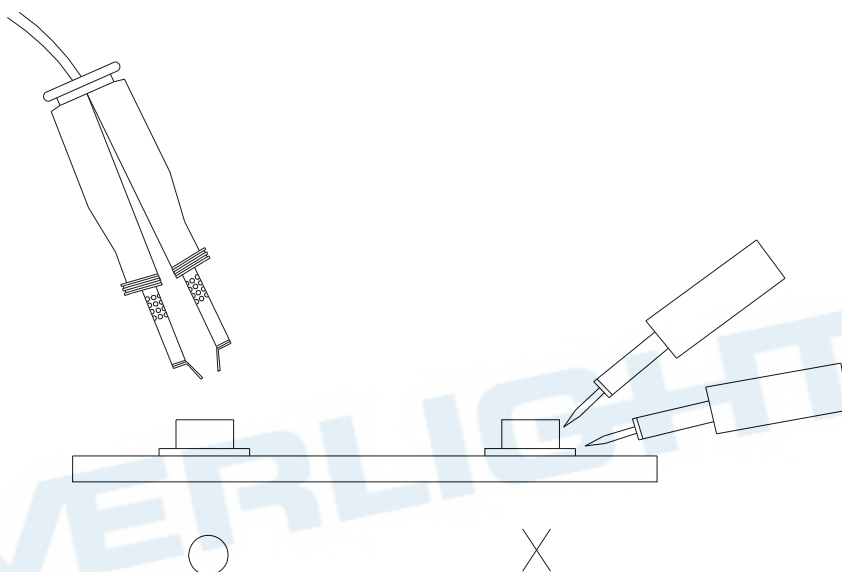
3.4 After soldering, do not warp the circuit board.

#### 4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than  $350^{\circ}\text{C}$  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.



Technical drawing of a circular mechanical part, showing a top view and a side view.

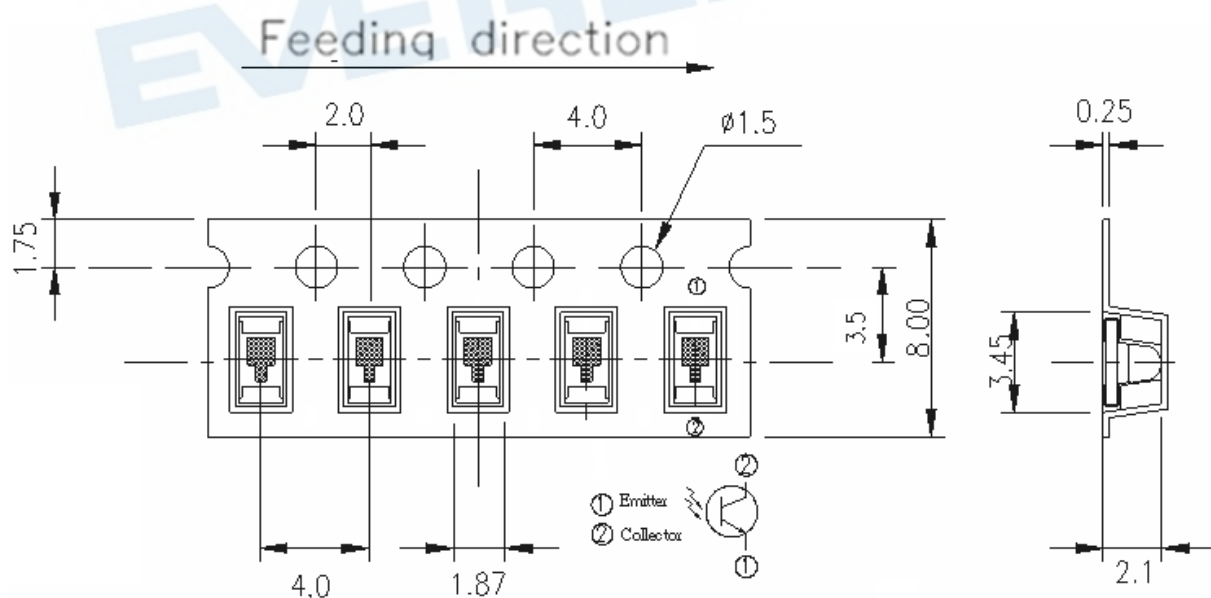
**Top View Dimensions:**

- Central hole diameter:  $2.2 \pm 0.5$
- Inner circle diameter:  $\phi 13.0 \pm 0.5$

**Side View Dimensions:**


- Overall diameter:  $\phi 178.0 \pm 1.0$
- Central hole diameter:  $\phi 60.0 \pm 0.5$
- Thickness:  $9.0 \pm 0.5$
- Bottom flange thickness:  $12.0 \pm 0.15$


**Carrier Tape Dimensions: (Loaded Quantity: 1500pcs/reel)**



7

## Label Form Specification

RoHS		<b>EVERLIGHT</b>	<b>5</b>
CPN: XXXXXXXXXXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
P/N: XXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX			
QTY: 0123456789 HUE: XXXXXXXXXXXX			
CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX			
REFERENCE: BTPYYMDDXXXXX			
MSL-X MADE IN XXXXXX			



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 (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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6. This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized Everlight sales agent for special application request.

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