

## Technical Data Sheet

### 1.6mm Round Subminiature Chip Phototransistor

#### PT26-21B/CT

#### Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape on 7" diameter reel
- Pb free
- The product itself will remain within RoHS compliant version.



#### Descriptions

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

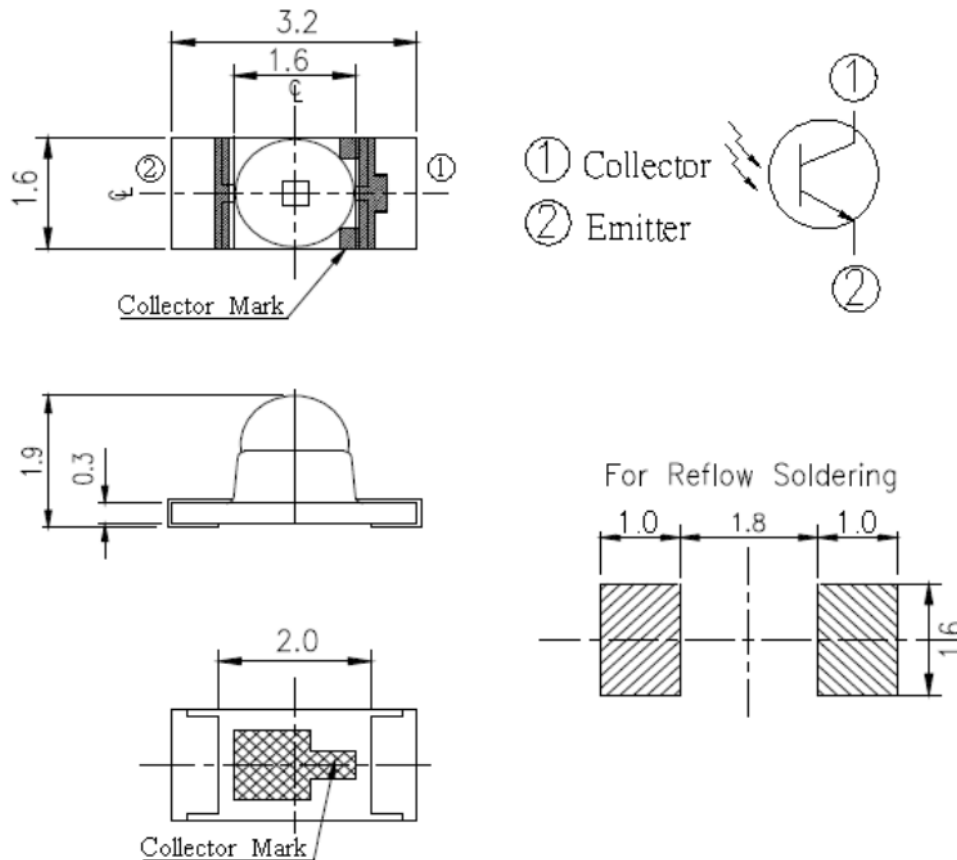
#### Applications

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

#### Device Selection Guide

Part No.	Chip	Lens Color
	Material	
PT	Silicon	Black

### Package Dimensions



- Notes:**
1. All dimensions are in millimeters
  2. Tolerances unless dimensions  $\pm 0.1$  mm

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

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	$V_{CEO}$	30	V
Emitter-Collector-Voltage	$V_{ECO}$	5	V
Collector Current	$I_C$	20	mA
Operating Temperature	$T_{opr}$	-25 ~ +85	
Storage Temperature	$T_{stg}$	-40 ~ +100	
Soldering Temperature *1	$T_{sol}$	260	
Power Dissipation at(or below) 25 Free Air Temperature	$P_d$	75	mW

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

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	0.1	---	730	---	1100	nm
Wavelength Of Peak Sensitivity	P	---	---	840	---	nm
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=500 \mu A$ $E_e=0mW/cm^2$	30	---	---	V
Emitter-Collector Breakdown Voltage	$BV_{ECO}$	$I_E=50 \mu A$ $E_e=0mW/cm^2$	5	---	---	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5mA$ $E_e=1m W/cm^2$	---	---	0.4	V
Collector Dark Current	$I_{CEO}$	$V_{CE}=20V$ $E_e=0mW/cm^2$	---	---	50	nA
On State Collector Current	$I_{C(ON)}$	$V_{CE}=5V$ $E_e=1mW /cm^2$ $p=940nm$	---	1.0	---	mA
Rise Time	$t_r$	$V_{CE}=5V$ $I_C=1mA$ $R_L=1000$	---	20	---	$\mu S$
Fall Time	$t_f$		---	20	---	

### Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

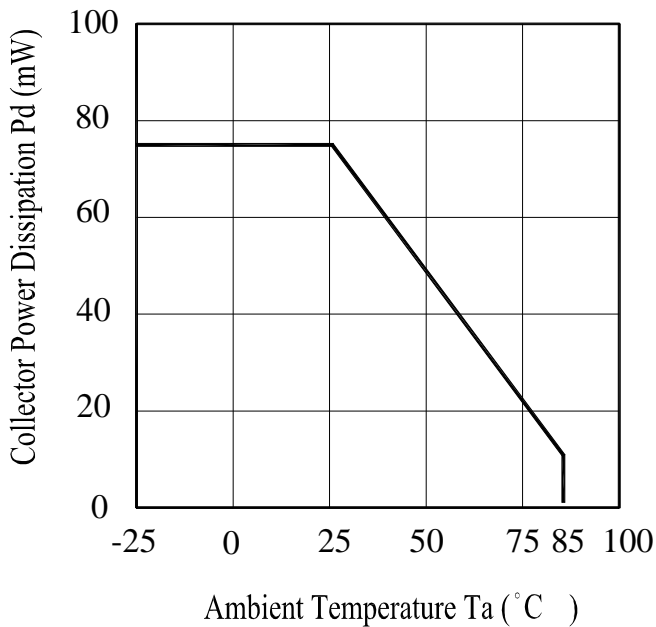


Fig.2 Spectral Sensitivity

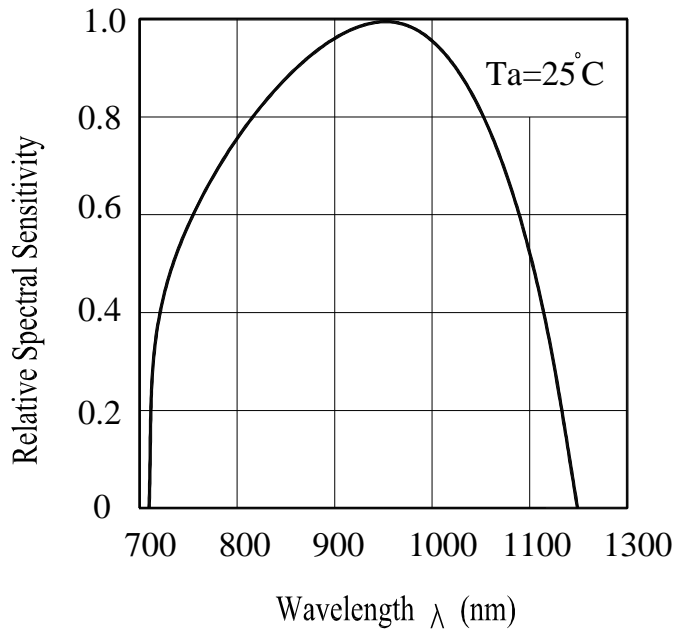


Fig.3 Collector Current vs. Irradiance

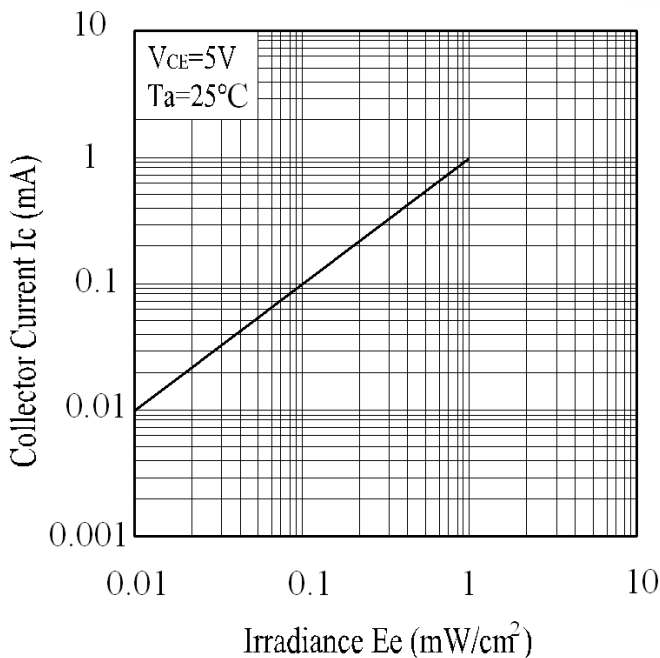
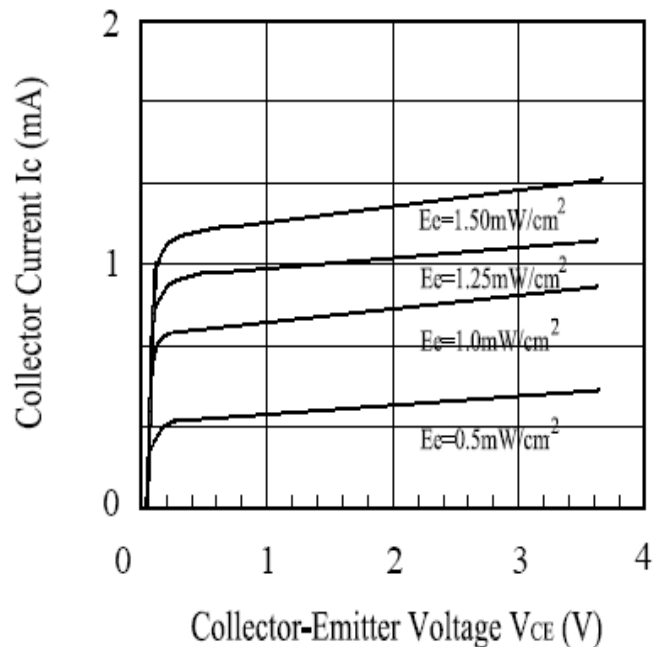


Fig.4 Collector Current vs. Collector-Emitter Voltage



### 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 LEDs should be kept at 30 or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30 or less and 60% RH or less.

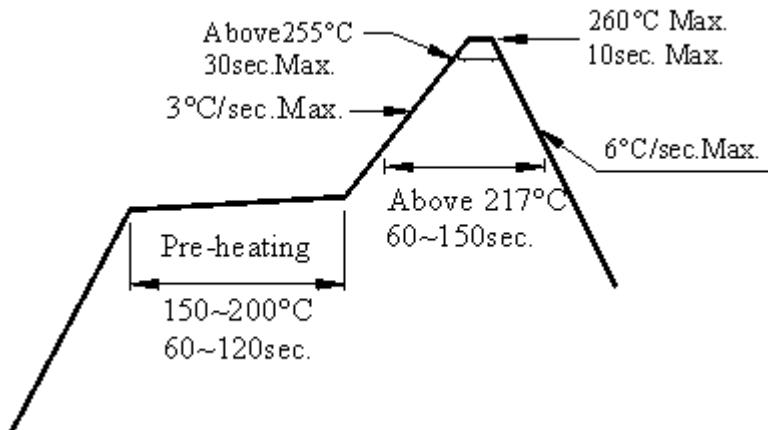
If unused LEDs remain, it should be stored in moisture proof packages.

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 :  $60\pm 5$  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.

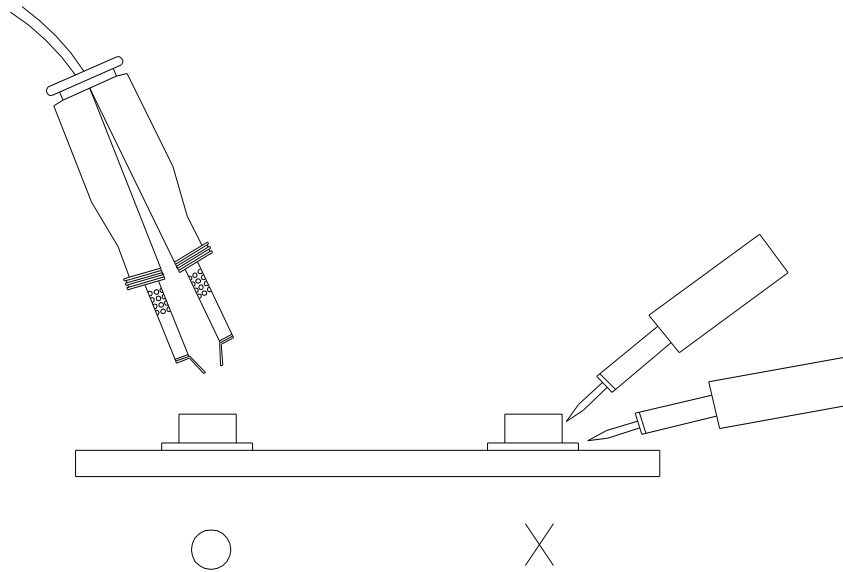
3.4 After soldering, do not warp the circuit board.

### 4.Soldering Iron

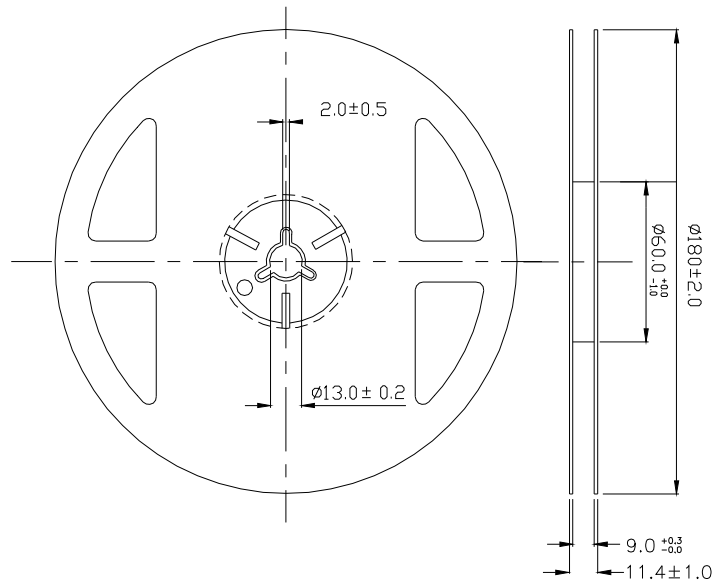
Each terminal is to go to the tip of soldering iron temperature less than 350 for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the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

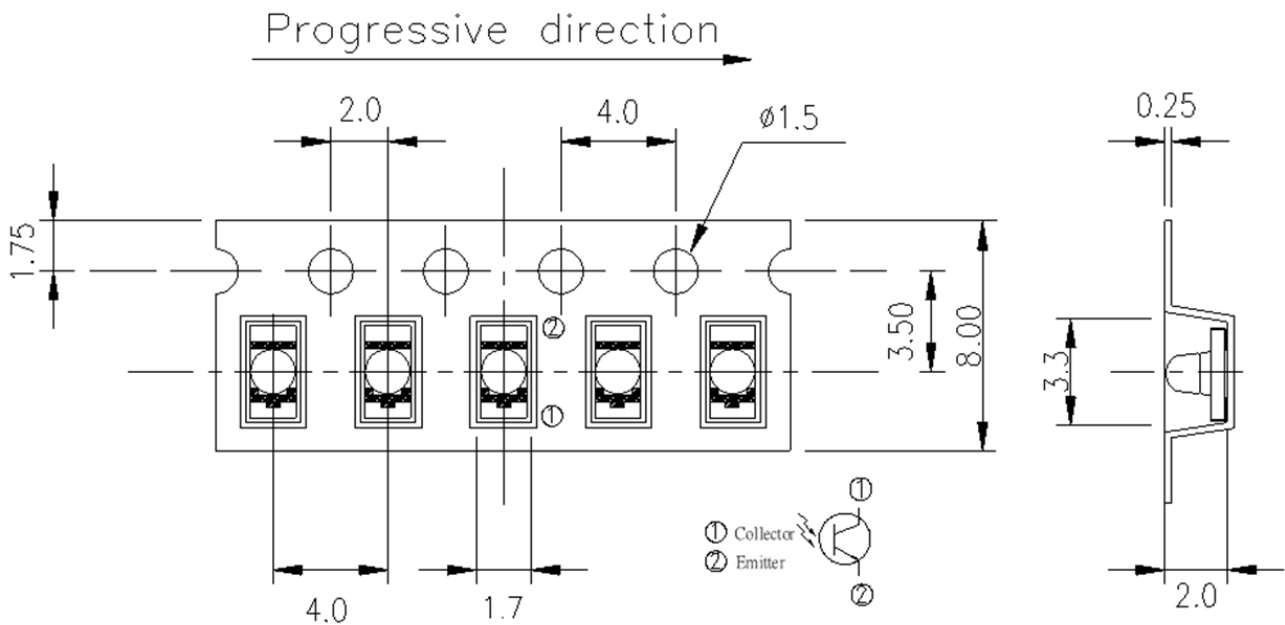


### Package Dimensions



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

### Carrier Tape Dimensions: Loaded quantity 1500 PCS per reel



Unit:mm

### Label Form Specification

The diagram shows a rectangular label form with the following elements:

- Top left: A circle containing the letters "Pb".
- Top center: A rectangular box containing the word "EVERLIGHT".
- Top right: An empty circle.
- Below "EVERLIGHT": "CPN : XXXXXXXXXXXXXXXX" and "P/N : XXXXXXXXXXXXXXXX" followed by a barcode and "XXXXXXXXXXXXXXXXXX".
- Bottom left: "QTY : XXX" followed by a barcode.
- Bottom center: "LOT NO : XXXXXXXXXXXX" followed by a barcode.
- Bottom right: "Reference : XXXXXXXX" followed by a barcode.
- Right side: A rectangular box containing "RoHS".
- Below "RoHS": "CAT : XXX", "HUE : XXX", and "REF : XXX".

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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