



### 3mm Phototransistor

MODEL NO : PT264-6B

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■ **Features :**

- Fast response times
- High photo sensitivity

■ **Description :**

- PT264-6B is a high speed and high sensitive silicon NPN phototransistor molder in a standard  $\phi 3$  mm package. The package is an IR filter , spectrally mathch to infrared emitter diode.

■ **Applications :**

- Optoelectronic switchs
- VCRs ,Video cameras
- Floppy disk drives
- Infrared applied systems

| PART NO. | CHIP     | LENS COLOR |
|----------|----------|------------|
|          | MATERIAL |            |
| PT       | Silicon  | Black      |

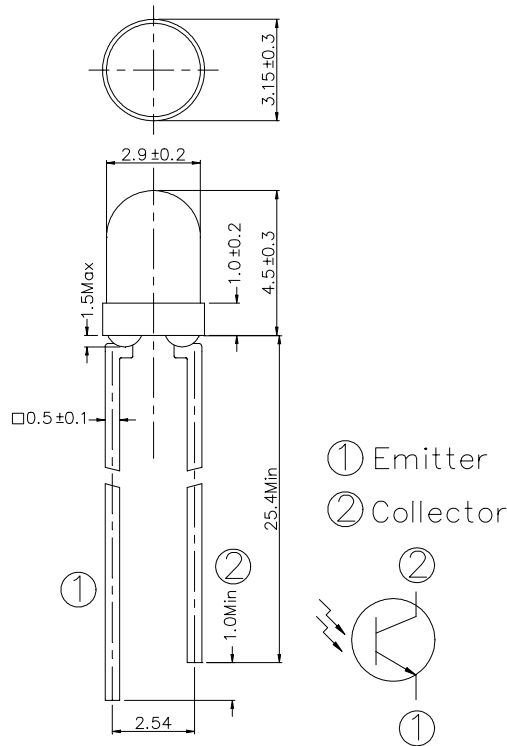
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#### ■ Package Dimension :



#### ■ Notes :

1. All dimensions are in millimeter.
2. Protruded resin under flange 1.5 mm Max.
3. Lead spacing is measured where the lead emerge from the package.
4. Lens color : Black.
5. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
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7. When using this product , please observe the absolute maximum ratings and the instructions for use 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.

**3mm Phototransistor**MODEL NO : PT264-6B**■ Absolute Maximum Ratings at T<sub>A</sub> = 25°C**

| Parameter   | Symbol           | Rating    | Unit | Notice                                    |
|---|------------------|-----------|------|---|
| 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                                       | T <sub>sol</sub> | 260       | °C   | 4mm from mold body<br>less than 5 seconds |
| Power Dissipation at(or below)<br>25°C Free Air Temperature | P <sub>c</sub>   | 75        | mW   |   |

**■ Electronic Optical Characteristics :**

| Parameter                               | Symbol               | Min. | Typ.       | Max. | Unit | Condition   |
|---|----------------------|------|------------|------|------|---|
| Collector-Emitter<br>Breakdown Voltage  | BV <sub>CEO</sub>    | 30   | ----       | ---- | V    | I <sub>C</sub> =100 μA<br>Ee=0mW/cm <sup>2</sup>                    |
| Emitter-Collector<br>Breakdown Voltage  | BV <sub>ECO</sub>    | 5    | ----       | ---- | V    | I <sub>E</sub> =100 μA<br>Ee=0mW/cm <sup>2</sup>                    |
| Collector-Emitter<br>Saturation Voltage | V <sub>CE(sat)</sub> | ---- | ----       | 0.4  | V    | I <sub>C</sub> =2mA<br>Ee=1mW/cm <sup>2</sup>                       |
| Rise Time                               | t <sub>r</sub>       | ---- | 15         | ---- | μS   | V <sub>CE</sub> =5V<br>I <sub>C</sub> =1mA<br>R <sub>L</sub> =1000Ω |
| Fall Time                               | t <sub>f</sub>       | ---- | 15         | ---- |      |   |
| Collector Dark<br>Current               | I <sub>CEO</sub>     | ---- | ----       | 100  | nA   | V <sub>CE</sub> =20V<br>Ee=0mW/cm <sup>2</sup>                      |
| On State Collector<br>Current           | I <sub>C(on)</sub>   | 0.7  | 1.0        | ---- | mA   | V <sub>CE</sub> =5V<br>Ee=1mW/cm <sup>2</sup>                       |
| Wavelength of<br>Peak Sensitivity       | λ <sub>p</sub>       | ---- | 980        | ---- | nm   | ----  |
| Rang of Spectral<br>Bandwidth           | λ <sub>0.5</sub>     | ---- | 840---1200 | ---- | nm   | ----  |

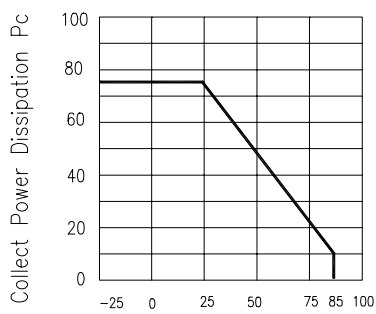


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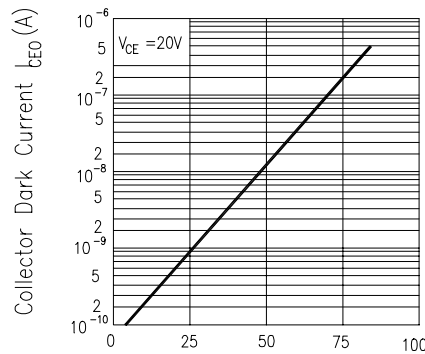
## Typical Electrical/Optical/Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature



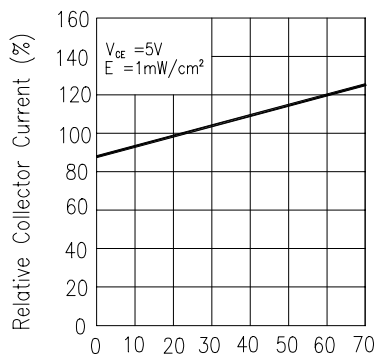
Ambient Temperature  $T_a$  (°C)

Fig.2 Collector Dark Current vs. Ambient Temperature



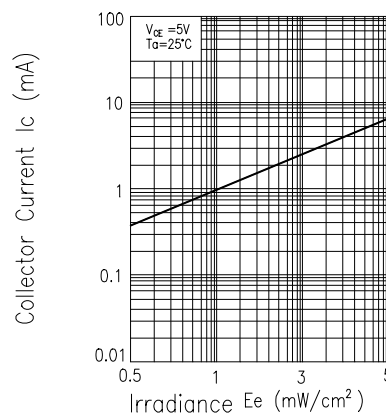
Ambient Temperature  $T_a$  (°C)

Fig. 3 Relative Collector Current vs. Ambient Temperature



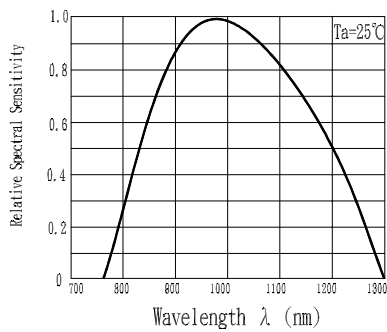
Ambient Temperature  $T_a$  (°C)

Fig.4 Collector Current vs. Irradiance



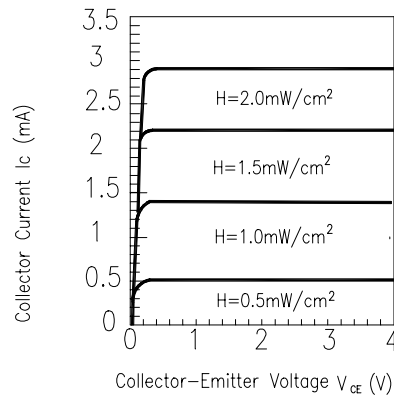
Irradiance  $E_e$  (mW/cm<sup>2</sup>)

Fig.5 Spectral Sensitivity



Wavelength  $\lambda$  (nm)

Fig.6 Collector Current vs. Collector-Emitter Voltage



Collector-Emitter Voltage  $V_{CE}$  (V)



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**■ Reliability Test Item And Condition**

The reliability of products shall be satisfied with items listed below.

Confidence level:90%

LTPD:10%

| NO. | Item                             | Test Conditions  | Test Hours/<br>Cycle | Sample Size | Failure Judgement Criteria  | Ac/Re |
|-----|----------------------------------|--|----------------------|-------------|---|-------|
| 1   | Solder Heat                      | TEMP : 260°C ± 5 °C  | 5 sec                | 22 PCs      | $I_{c(on)} \leq L \times 0.8$<br><br>L :Lower specification limit | 0/1   |
| 2   | Temperature Cycle                | H : +85°C    30 min<br>↑<br>5 min<br>↓<br>L : -55°C    30 min  | 50 cycle             | 22 PCs      |   | 0/1   |
| 3   | Thermal Shock                    | H : +100°C    5 min<br>↑<br>10 sec<br>↓<br>L : -10°C    30 min | 50 cycle             | 22 PCs      |   | 0/1   |
| 4   | High Temperature Storage         | TEMP. : +100°C   | 1000 hrs             | 22 PCs      |   | 0/1   |
| 5   | Low Temperature Storage          | TEMP. : -55°C  | 1000 hrs             | 22 PCs      |   | 0/1   |
| 6   | DC Operating Life                | $V_{CE}=5V$  | 1000 hrs             | 22 PCs      |   | 0/1   |
| 7   | High Temperature / High Humidity | 85°C / 85% R.H.  | 1000 hrs             | 22 PCs      |   | 0/1   |



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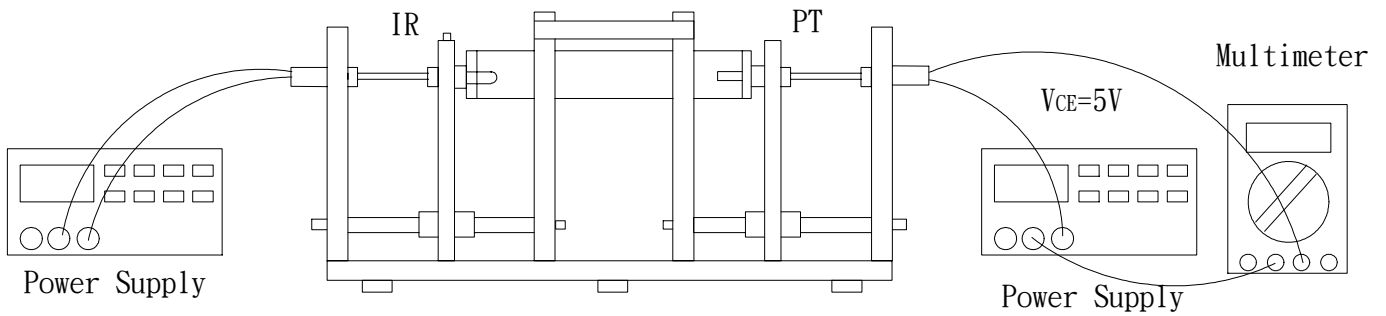
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#### ■ Test Method For On State Collector Current :

Condition :  $E_e=1\text{mW/cm}^2$  ,  $V_{CE}=5\text{V}$

Test Item : Collector Current [ $I_{C(on)}$ ]

Unit : mA





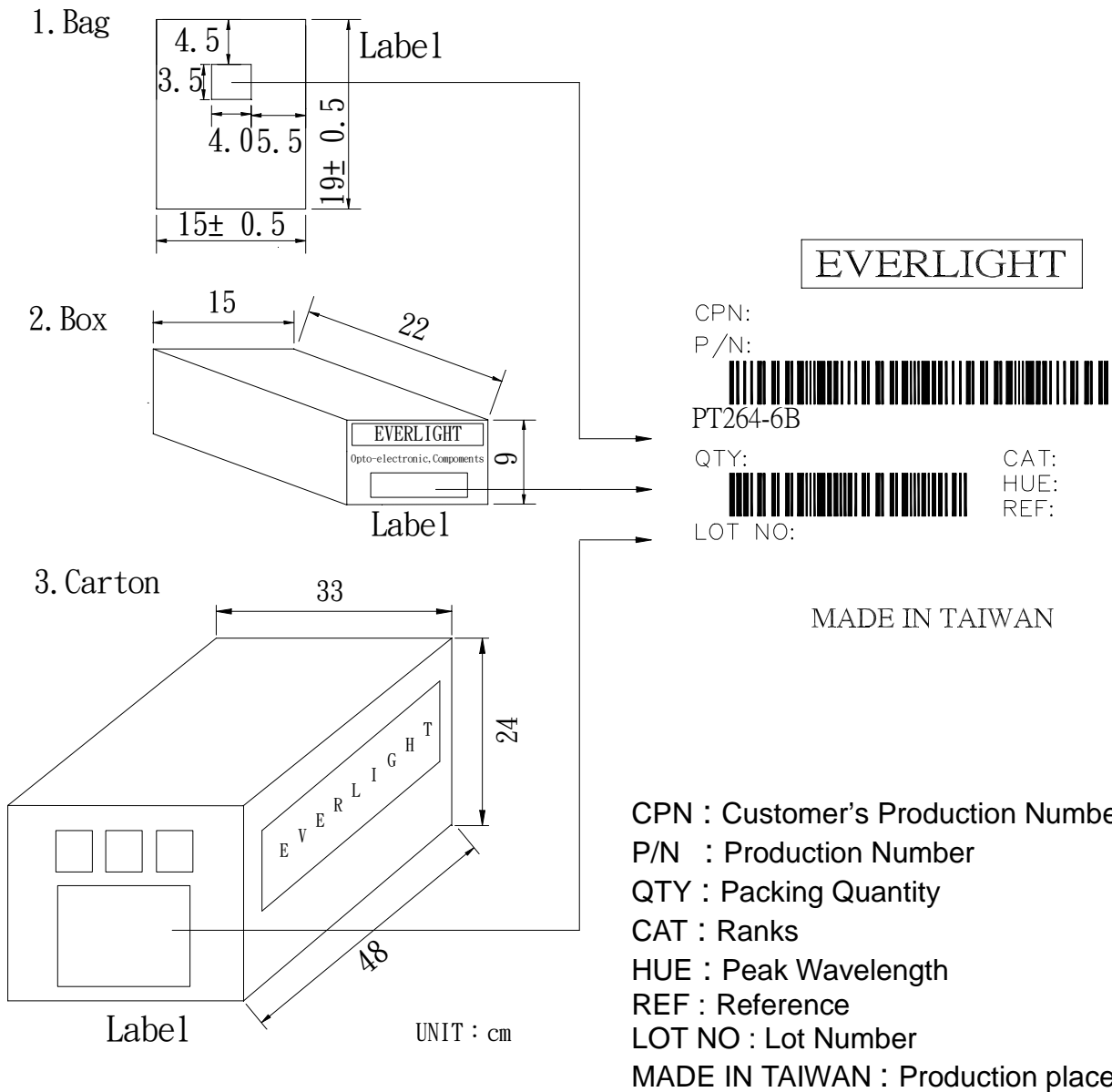
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DEVICE NUMBER : DPT-026-109    REV : 1.0  
ECN : \_\_\_\_\_    PAGE : 7/7

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### ■ Packing Specifications



### ■ Packing Quantity Specification

1. 1000 Pcs/1Bag , 4 Bags/1Box
2. 10 Boxes/1Carton