



### 3mm Phototransistor

MODEL NO : PT202C-3

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■ **Features :**

- Fast response times
- High photo sensitivity

■ **Description :**

- PT202C-3 is a high speed and high sensitive silicon NPN epitaxial planar phototransistor in a standard  $\phi 3$  mm package. Due to its water clear epoxy the device is sensitive to visible and near infrared radiation.

■ **Applications :**

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

PART NO.	CHIP	LENS COLOR
	MATERIAL	
PT	Silicon	Water Clear

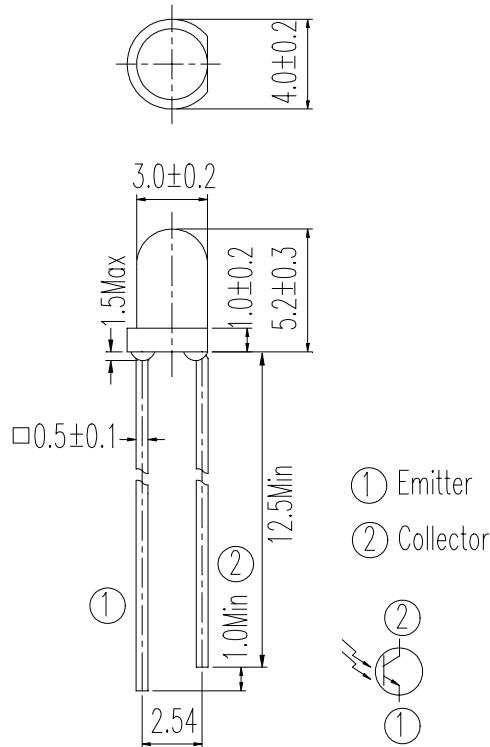
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#### ■ Package Dimension :



#### ■ 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 : Water clear.
5. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
6. These specification sheets include materials protected under copyright of EVERLIGHT corporation . Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.
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.



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### ■ 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 less than 5 seconds
Power Dissipation at(or below) 25°C Free Air Temperature	P <sub>C</sub>	75	mW	

### ■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	30	----	----	V	I <sub>C</sub> =100 μA Ee=0mW/cm <sup>2</sup>
Emitter-Collector Breakdown Voltage	BV <sub>ECO</sub>	5	----	----	V	I <sub>E</sub> =100 μA Ee=0mW/cm <sup>2</sup>
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	----	----	0.4	V	I <sub>C</sub> =2mA Ee=1mW/cm <sup>2</sup>
Rise Time	t <sub>r</sub>	----	15	----	μS	V <sub>CE</sub> =5V I <sub>C</sub> =1mA R <sub>L</sub> =1000Ω
Fall Time	t <sub>f</sub>	----	15	----		
Collector Dark Current	I <sub>CEO</sub>	----	----	100	nA	V <sub>CE</sub> =20V Ee=0mW/cm <sup>2</sup>
On State Collector Current	I <sub>C(on)</sub>	1.0	3.0	----	mA	V <sub>CE</sub> =5V Ee=1mW/cm <sup>2</sup>
Wavelength of Peak Sensitivity	λ <sub>p</sub>	----	860	----	nm	----
Rang of Spectral Bandwidth	λ <sub>0.5</sub>	----	400---1200	----	nm	----

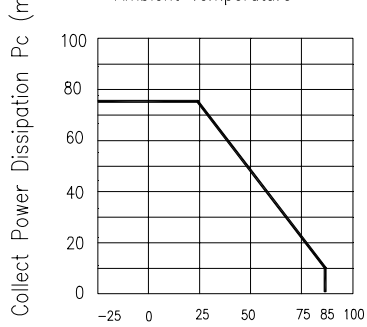


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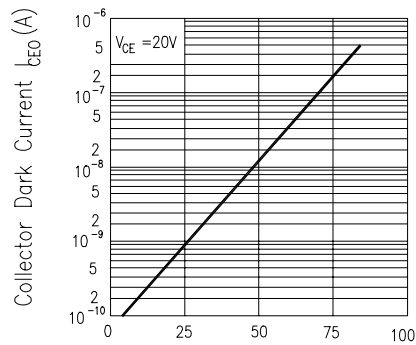
## Typical Electrical/Optical/Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature



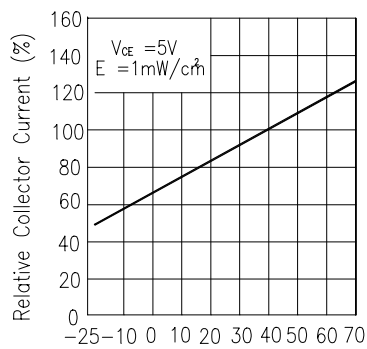
Ambient Temperature  $T_a$  (°C)

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

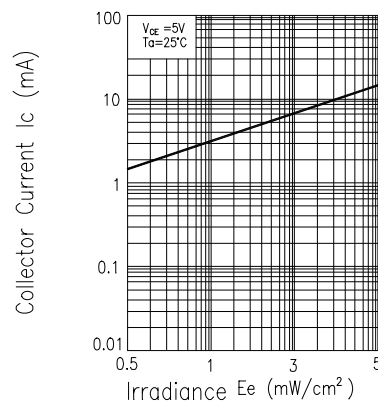
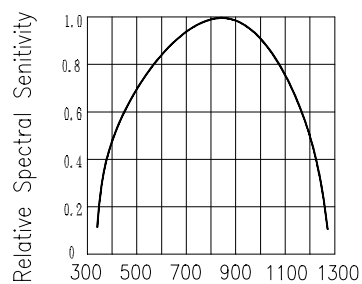
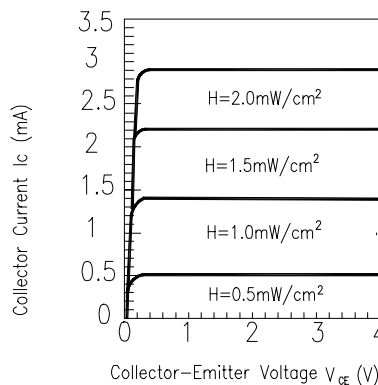


Fig.5 Spectral Sensitivity



Wavelength  $\lambda$  (nm)

Fig.6 Collector Current vs. Collector-Emitter Voltage





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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/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 sec	22 PCs	$I_{c(on)} \leq L \times 0.8$  L :Lower specification limit	0/1
2	Temperature Cycle	H : +85°C    30 min 5 min ↓ L : -55°C    30 min	50 cycle	22 PCs		0/1
3	Thermal Shock	H : +100°C    5 min 10 sec ↓ 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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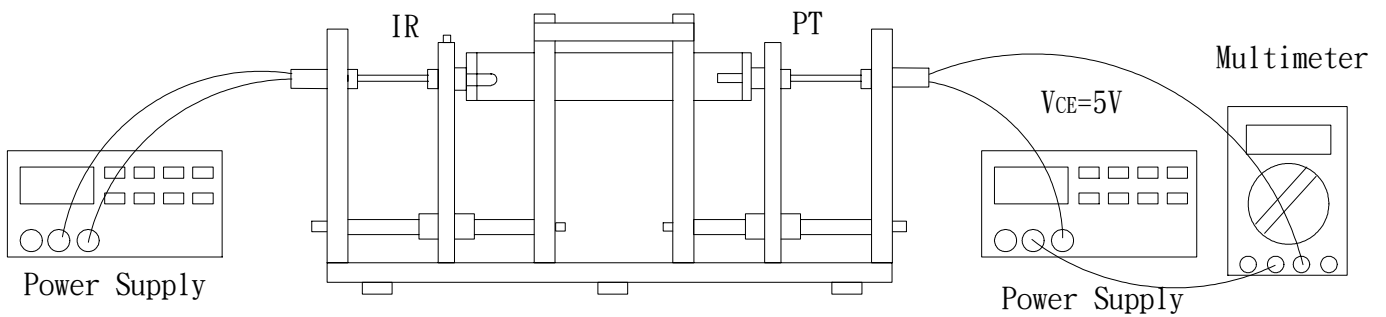
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#### ■ Test Method For On State Collector Current :

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

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

Unit : mA





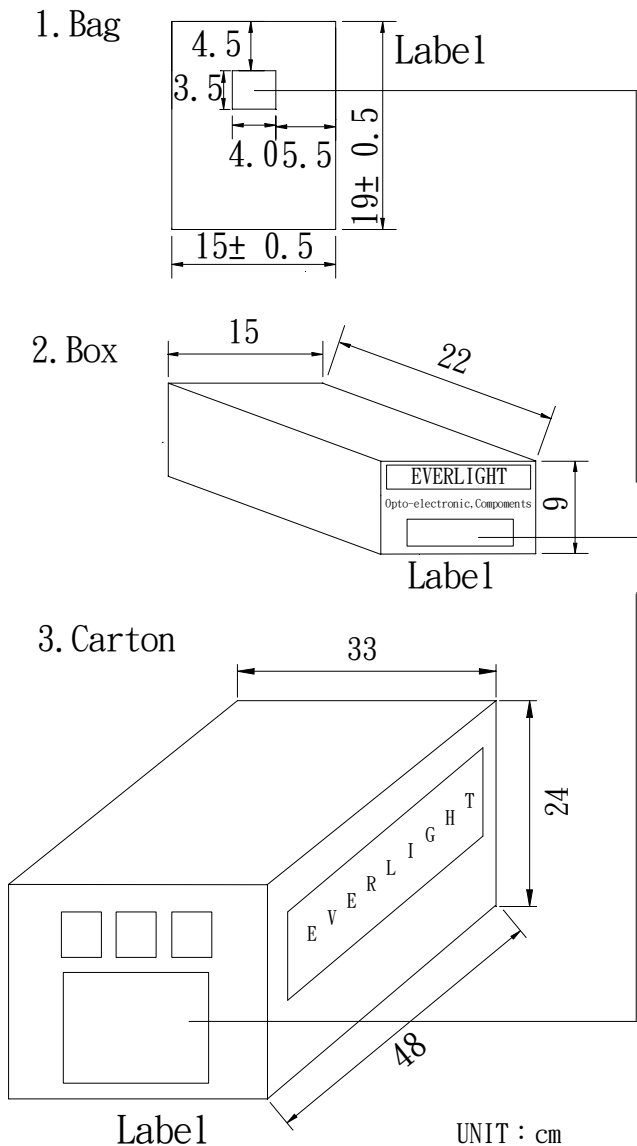
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### ■ Packing Specifications



EVERLIGHT

CPN:  
P/N:



PT202C-3

QTY:



CAT:  
HUE:  
REF:

LOT NO:

MADE IN TAIWAN

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

### ■ Packing Quantity Specification

1. 1000 Pcs/1Bag , 6 Bags/1Box
2. 10 Boxes/1Carton