EVERLIGHT ELECTRONICS CO., LTD.

3mm Phototransistor,T-1

MODEL NO : PT202

Features :

- Fast response time
- High photo sensitivity

Description :

- PT202 is a high speed and high sensitive silicon NPN epitaxial planar phototransistor in a standard ϕ3 mm package. Due to its blue transparent epoxy the device is sensitive to visible and near infrared radiation.

Applications :

- Optoelectronic switch
- VCRs ,Video camera
- Floppy disk drive
- Infrared applied system

PART NO.	CHIP MATERIAL	LENS COLOR
PT	Silicon	Blue transparent

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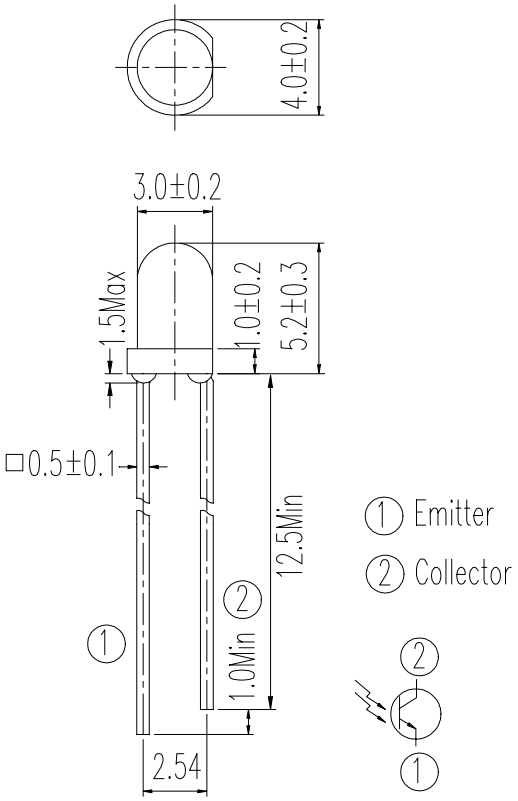
Package Dimensions :



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：Blue transparent.

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_A = 25℃

Parameter	Symbol	Rating	Unit	Notice
Collector-Emitter Voltage	V_{CEO}	30	V	
Emitter-Collector- Voltage	V_{ECO}	5	V	
Collector Current	I_C	20	mA	
Operating Temperature	Topr	-25 ~ +85	℃	
Storage Temperature	Tstg	-40 ~ +85	℃	
Soldering Temperature	Tsol	260	℃	4mm from mold body less than 5 seconds
Power Dissipation at(or below) 25℃ Free Air Temperature	Pc	75	mW	

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-Emitter Breakdown Voltage	BV_{CEO}	30	----	----	V	I_C=100μA Ee=0mW/cm^2
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	----	----	V	I_E=100μA Ee=0mW/cm^2
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	----	----	0.4	V	I_C=2mA Ee=1mW/cm^2
Rise Time	t_r	----	15	----	μS	V_{CE}=5V I_C=1mA R_L=1000Ω
Fall Time	t_f	----	15	----		
Collector Dark Current	I_{CEO}	----	----	100	nA	V_{CE}=20V Ee=0mW/cm^2
On State Collector Current	$I_{C(on)}$	0.7	2.0	----	mA	V_{CE}=5V Ee=1mW/cm^2
Wavelength of Peak Sensitivity	λ_p	----	980	----	nm	----
Rang of Spectral Bandwidth	$\lambda_{0.5}$	----	400---1200	----	nm	----

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■ Typical Electrical/Optical/Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

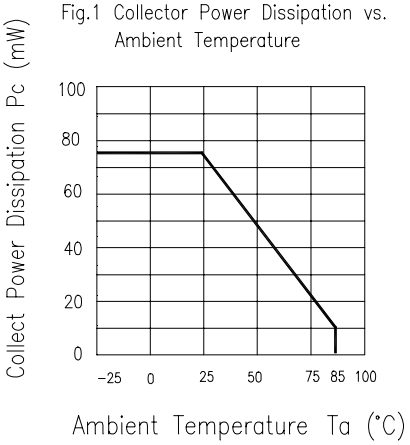


Fig.2 Collector Dark Current vs. Ambient Temperature

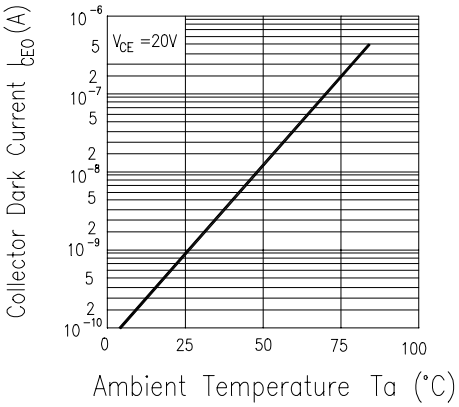


Fig. 3 Relative Collector Current vs. Ambient Temperature

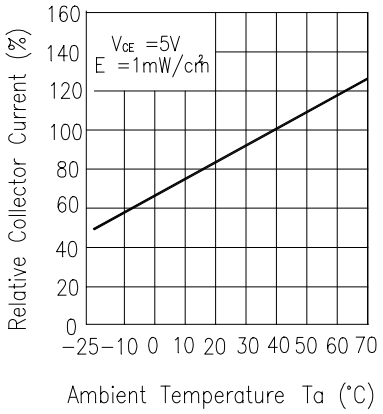


Fig.4 Collector Current vs. Irradiance

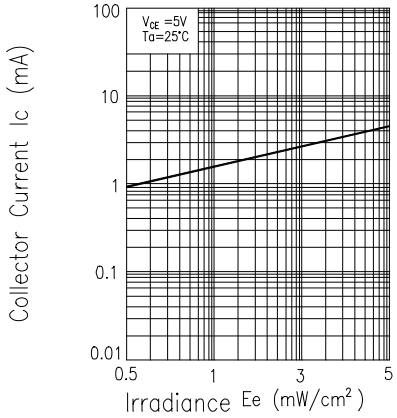


Fig.5 Spectral Sensitivity

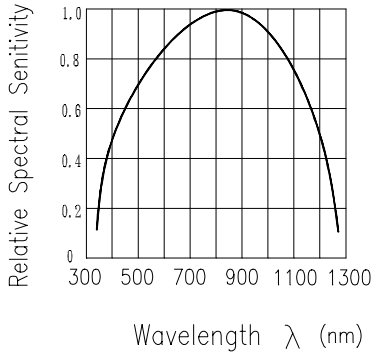
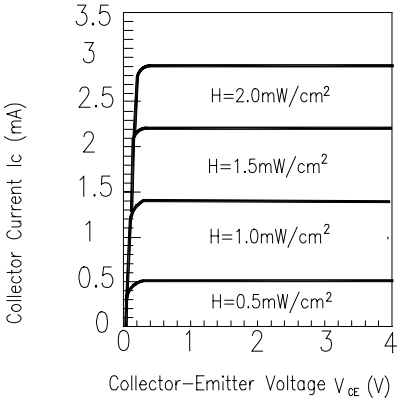


Fig.6 Collector Current vs. Collector−Emitter Voltage



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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/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	**Solder Heat**	TEMP : 260℃ ± 5 ℃	5 secs	22 pcs	$I_{c(on)} \leqq L \times 0.8$ L :Lower specification limit	0/1
2	**Temperature Cycle**	H : +85℃ 30 mins ↕ 5 mins L : -55℃ 30 mins	50 cycles	22 pcs		0/1
3	**Thermal Shock**	H : +100℃ 5 mins ↕ 10 secs L : -10℃ 5 mins	50 cycles	22 pcs		0/1
4	**High Temperature Storage**	TEMP. : +100℃	1000 hrs	22 pcs		0/1
5	**Low Temperature Storage**	TEMP. : -55℃	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℃ / 85% R.H.	1000 hrs	22 pcs		0/1

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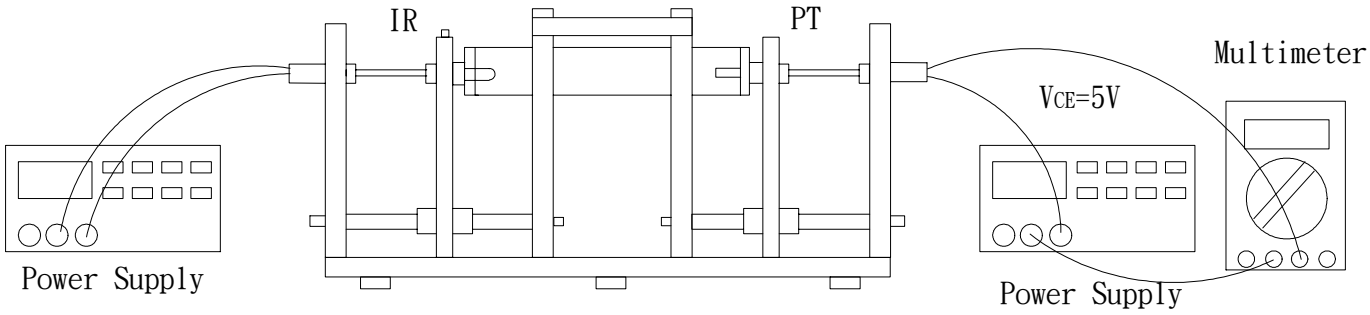
Test Method For On State Collector Current :

Condition : Ee=1mW/cm^2 , V_{CE}=5V

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

Unit : mA



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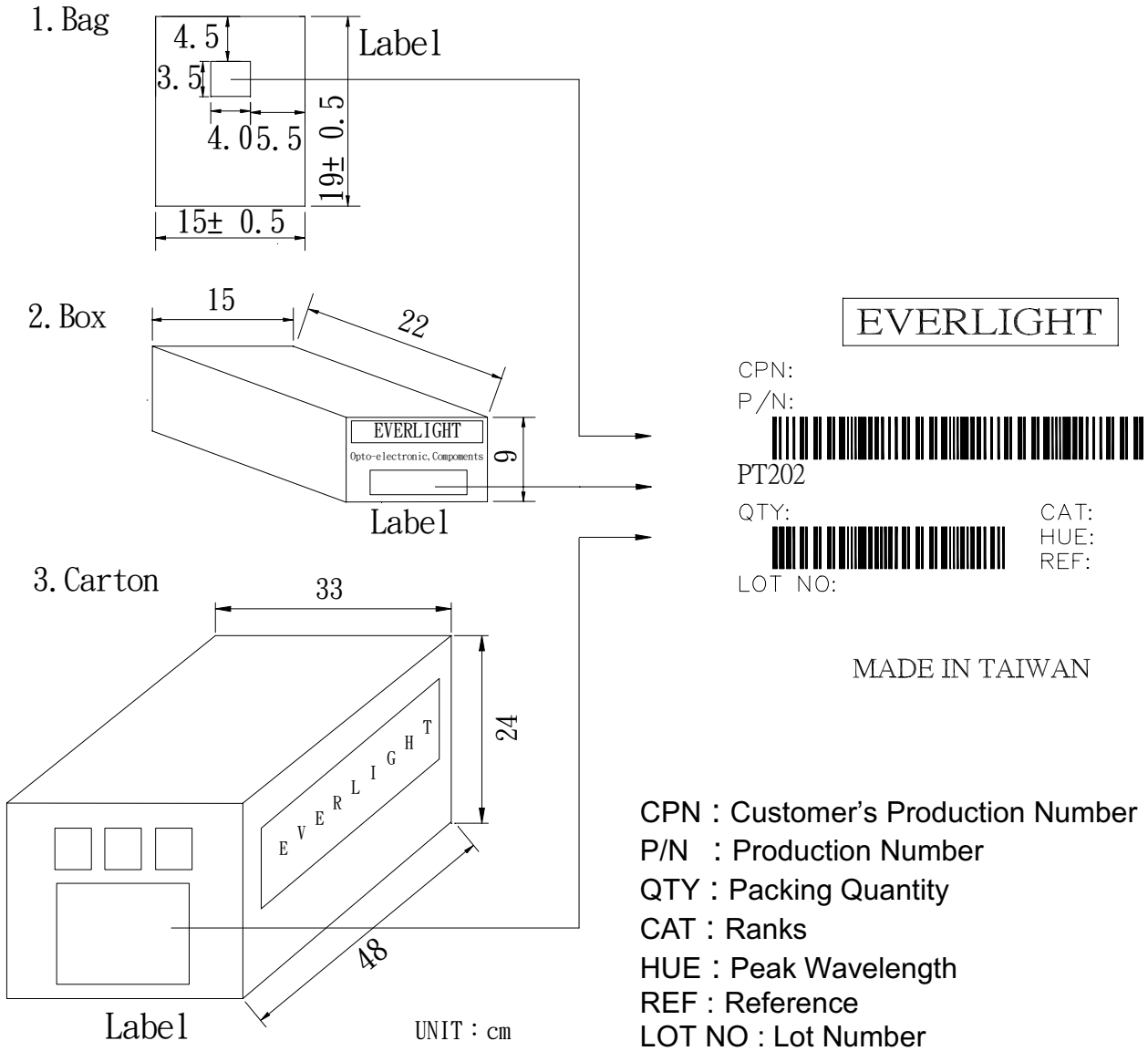
Packing Specifications



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，4 Bags/1Box
2. 10 Boxes/1Carton