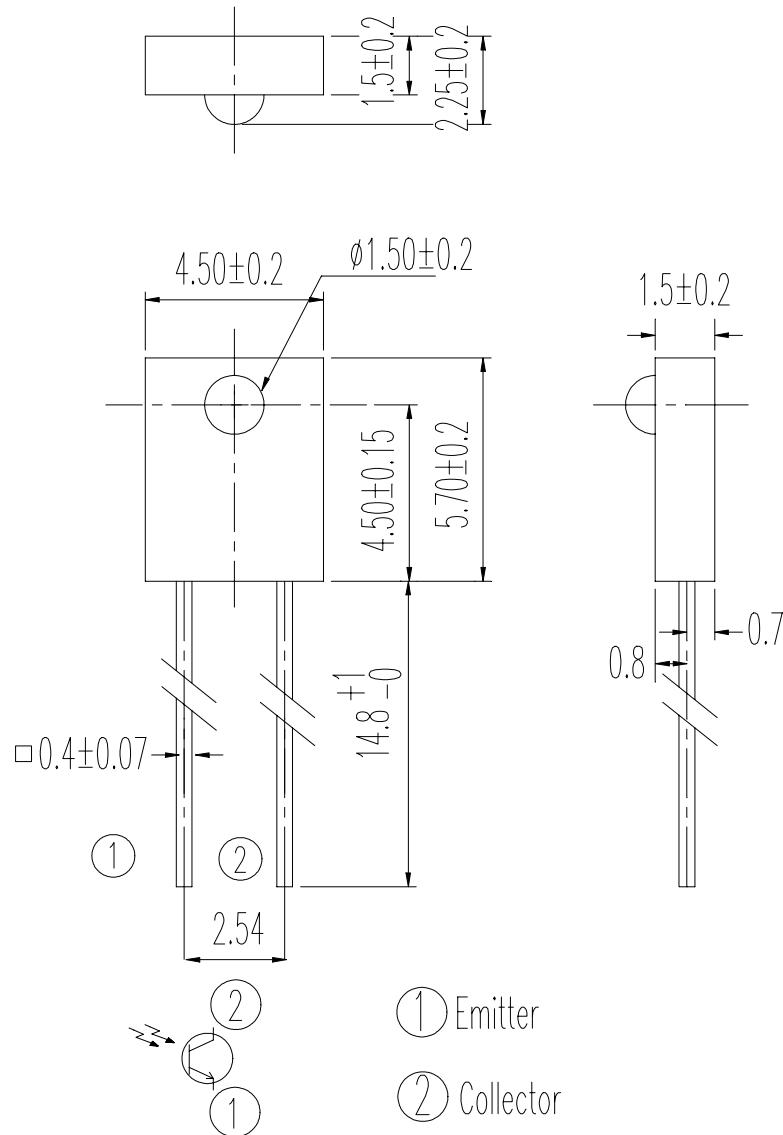




Device Number: DPT-090-107 REV: 1.0  
MODEL NO: PT908-7B ECN: \_\_\_\_\_ Page: 1/7

**Package Dimensions:**



Office: NO 25, Lane.76, Chung Yang Rd., Sec.3, Tucheng, Taipei 236, Taiwan, R.O.C.

TEL: 886-2-2267-2000, 2267-9936 (22 Lines)

FAX: 886-2-2267-6189

http: //www.everlight.com



Device Number: DPT-090-107 REV: 1.0  
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### ◎Notes :

- 1.All dimensions are in millimeter.
- 2.General tolerance :  $\pm 0.1\text{mm}$
- 3.Lead spacing is measured where the lead emerge from the package.
- 4.Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
- 5.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.
- 6.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.

### Description

The **PT908-7B** is a high speed and high sensitivity single photo transistor; molds in a black plastic package with spherical side view lens.

The device is spectrally matched with IR emitters.

### Features

- Wide angle of half sensitivity  $\theta = \pm 30^\circ$
- High sensitivity
- Fast response time

### Applications

- Mouse
- Optoelectronic switch
- Photo interrupter

**Absolute Maximum Ratings**

(Ta=25°C)

ITEM	SYMBOL	RATING	UNIT
Collector Power Dissipation	Pc	75	mW
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Collector Voltage	V <sub>ECO</sub>	5	V
Collector Current	Ic	20	mA
Operating Temperature	Topr	-25~+85	°C
Storage Temperature	Tstg	-40~+85	°C
Soldering Temperature (1/16 inch from body for 5 seconds)	Tsol	260	°C

**Electro-Optical Characteristics**

(Ta=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Condition	
Collector Dark Current	I <sub>CEO</sub>	-	-	100	nA	V <sub>CE</sub> =20V, Ee=0mW/cm <sup>2</sup>	
C-E Saturation Voltage	V <sub>CE(Sat)</sub>	-	-	0.4	V	Ic=0.5mA, Ee=10mW/cm <sup>2</sup>	
Collector Current	I <sub>C(ON)</sub>	0.78	-	3.12	mA	V <sub>CE</sub> =5V, Ee=0.555mW/cm <sup>2</sup>	
Peak Sensitivity Wavelength	λ <sub>p</sub>	-	860	-	nm	-	
Range of Spectral Bandwidth	λ <sub>0.5</sub>	-	700...1200	-	-	-	
Response Time	Rise Time	t <sub>r</sub>	-	15	-	μ Sec	V <sub>CE</sub> =5V Ic=1mA R <sub>L</sub> =1000Ω
	Fall Time	t <sub>f</sub>	-	15	-	μ Sec	
Half sensitivity angle	2θ 1/2	-	60	-	Deg	-	



**Typical Characteristics**

Fig.1 Collector Power Dissipation vs. Ambient Temperature

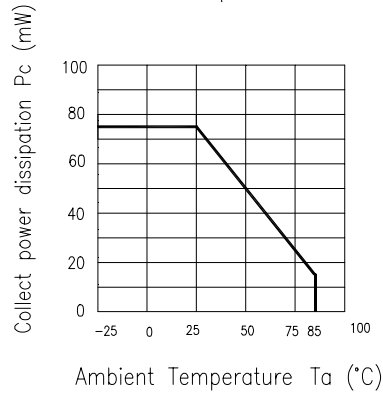


Fig.2 Collector Dark Current vs. Ambient Temperature

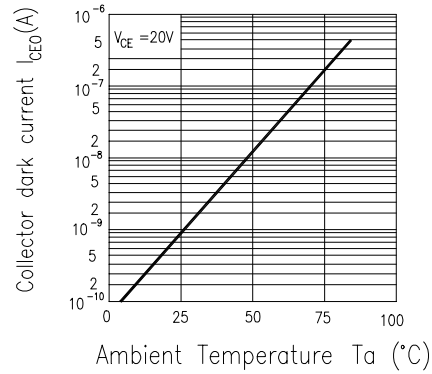


Fig. 3 Relative Collector Current vs. Ambient Temperature

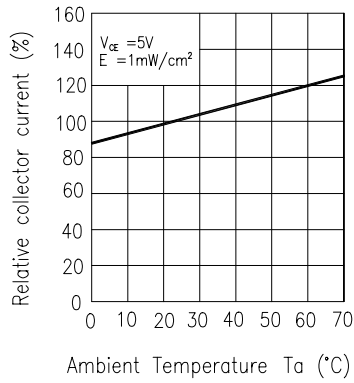


Fig.4 Collector Current vs. Irradiance

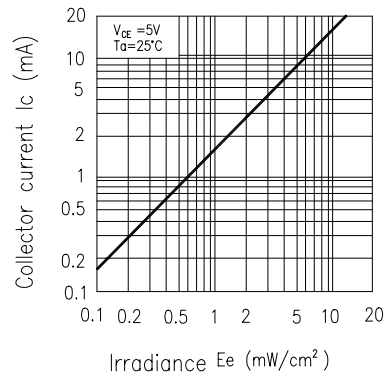


Fig.5 Spectral Sensitivity

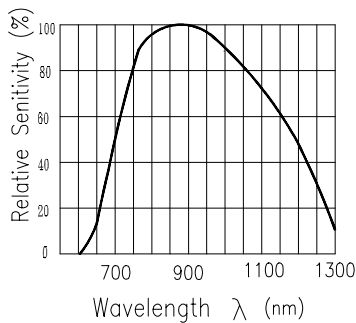
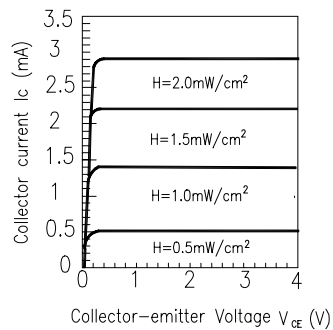
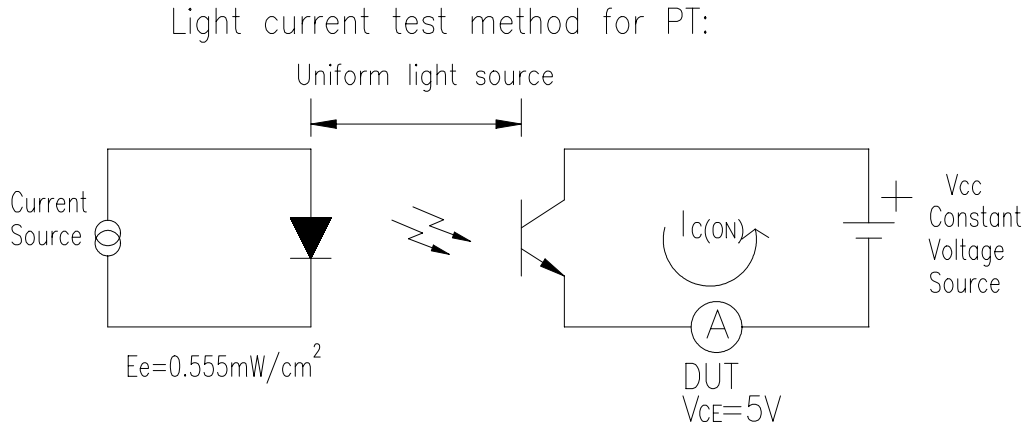


Fig.6 Collector Current vs. Collector-emitter Voltage



**Test Method**



**Ranks**

Color Code	Parameter	Symbol	Min	Max	Unit	Test Condition
Red	BIN1	$I_{C(ON)}$	0.78	1.56	mA	$V_{CE}=5V$ $E_e=0.555mW/cm^2$
Blue	BIN2		1.09	2.02		
Yellow	BIN3		1.40	2.73		
Silver	BIN4		1.56	3.12		

\* For the intensity test method, the output intensity is measured indirectly by a wide uniform light source(unfocused) calibrated to  $0.555mW/cm^2$ , ~940nm radiant intensity at the PT face. Details are shown in the above diagram. It's important that light intensity must be uniform across the face of the PT under test. Maximum and minimum values must include all variation due to mechanical and electrical sorting and measurement error.

**Supplements**

1.Parts

(1) Chip

Type	Material	Peak Wavelength
PT	Silicon	860nm

(2) Material

Type	Lead frame	Wire	Package
Material	SPCC	Gold	Epoxy



**Reliability**

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

Confidence level : 90%

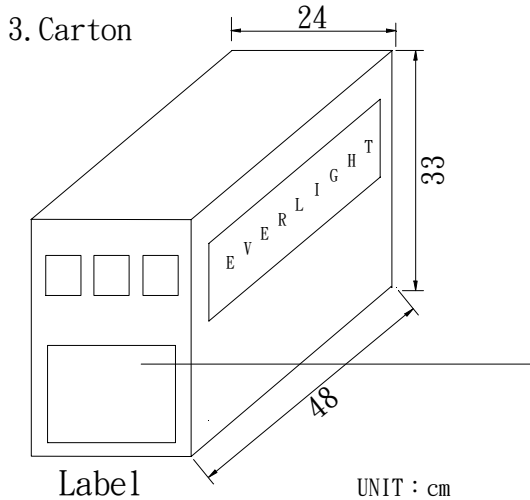
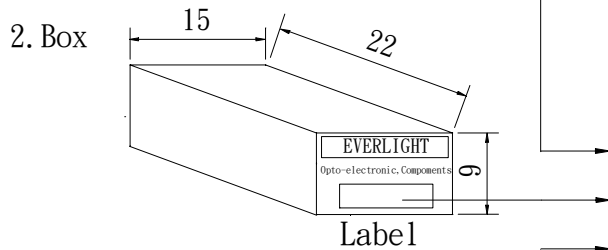
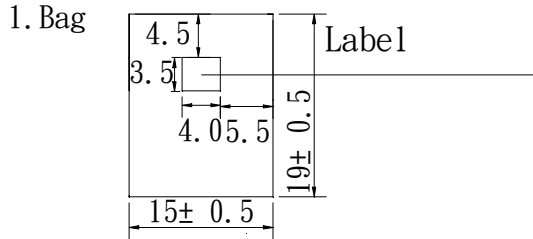
LTPD : 10%

Test Items	Test Conditions	Failure Judgement Criteria	Samples(n)
			Defect (c)
Operating life test	$V_{CE}=5V$ $T_a : 25^{\circ}C$ 1000hrs	$I_{c(on)} \leq L \times 0.8$  L : Lower specification limit	n =22 , c=0
Temperature cycle	1cycle $-55^{\circ}C$ to $+25^{\circ}C$ to $+85^{\circ}C$ (30min) (5min) (30min) 50 cycle test		n =22 , c=0
Thermal shock	$-55^{\circ}C$ to $+85^{\circ}C$ (5min) (10sec) (5min) 50cycle test		n =22 , c=0
High temperature Storage	Temp : $+100^{\circ}C$ 1000hrs		n =22 , c=0
Low temperature Storage	Temp : $-55^{\circ}C$ 1000hrs		n =22 , c=0
High temperature High humidity	$T_a : 85^{\circ}C$ RH : 85% 1000hrs		n =22 , c=0
Solder heat	Temp : $260 \pm 5^{\circ}C$ 10 sec		n =22 , c=0
Solderability	Temp : $230 \pm 5^{\circ}C$ 3 sec 4mm from the bottom of the package.	More than 90% of lead to be covered by soldering	n =22 , c=0



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### Packing Specifications



EVERLIGHT

CPN:

P/N: 3209085603



PT908-7B

QTY: 1000

CAT:



HUE:

REF:

LOT NO:

MADE IN TAIWAN

**CPN: Customer's product number**

**P/N: Product number**

**QTY: Packing quantity**

**CAT: Ranks**

**HUE: Peak wavelength**

**REF: Reference**

**LOT NO: Lot number**

**MADE IN TAIWAN: Production place**

### Packing Quantity Specification

1.1000Pcs/1bag , 6bags/1box

2.10boxes/1Carton