



EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DPT-091-006

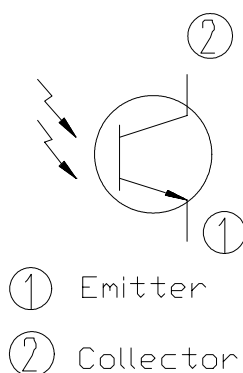
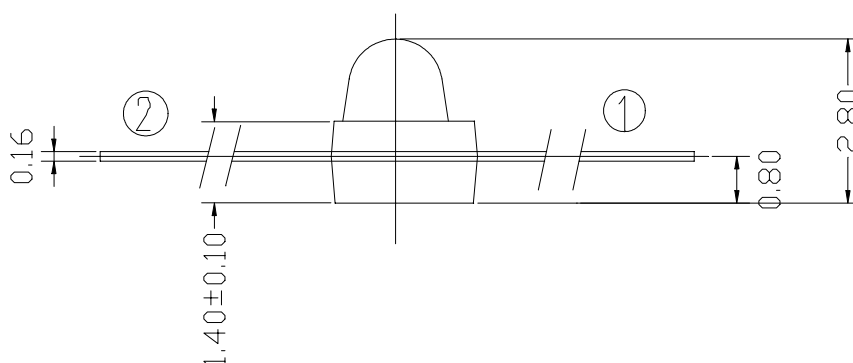
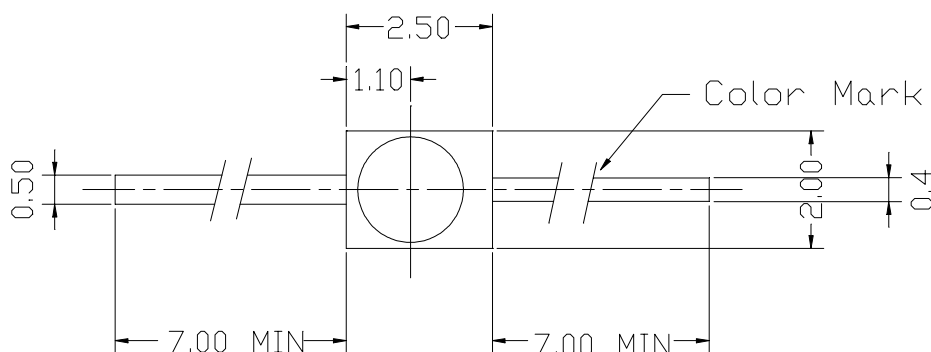
REV: 2.0

MODEL NO: PT91-21B

ECN:

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Package Dimensions:



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<http://www.everlight.com>



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©Notes :

- 1.All dimensions are in millimeter.
- 2.General Tolerance: $\pm 0.25\text{mm}$
- 3.Lead spacing is measured where the lead emerge from the package.
- 4.Lens color : Black 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.

Description

PT91-21B is a phototransistor in miniature SMD package which is molded in a black transparent plastic with spherical top view lens .The device is spectrally matched to infrared emitting diode.

Features

- High photo sensitivity
- Fast response times

Applications

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



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Absolute Maximum Ratings

(Ta=25°C)

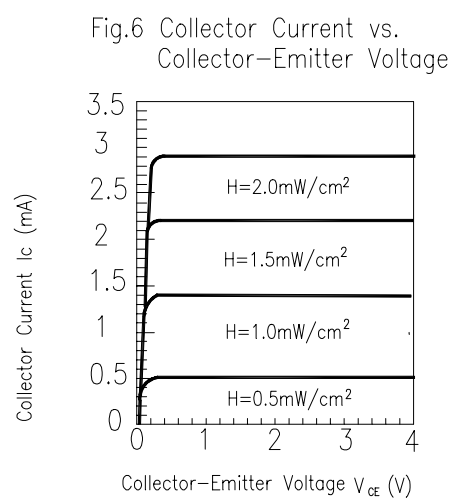
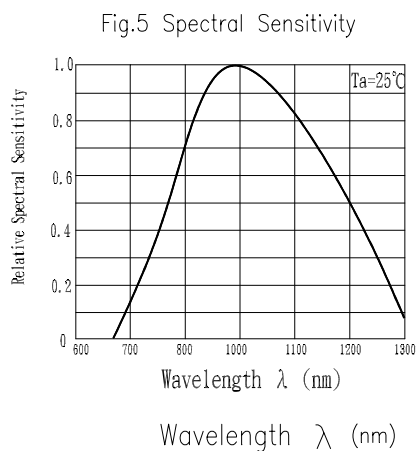
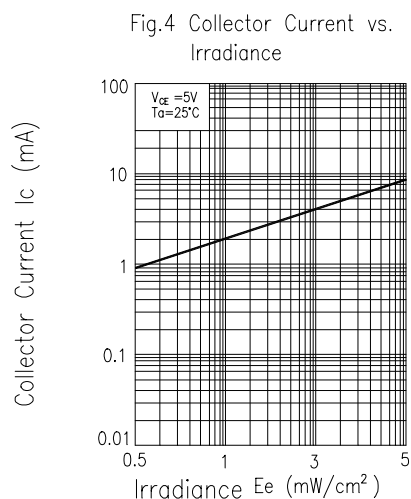
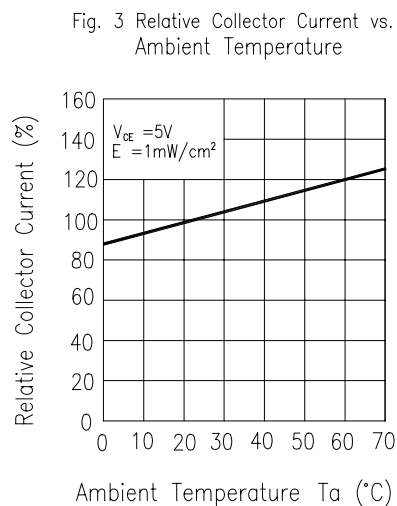
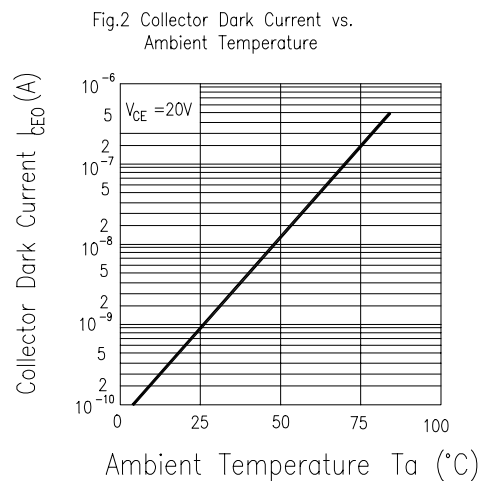
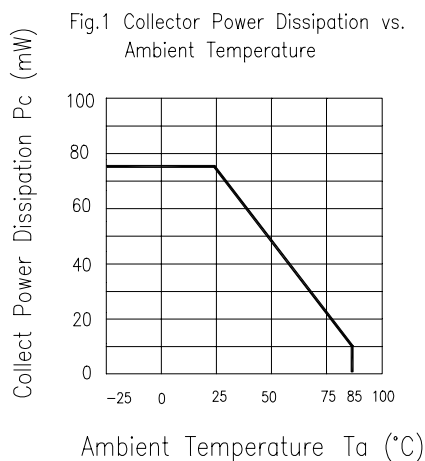
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector Voltage	V_{ECO}	5	V
Collector Current	I_C	20	mA
Operating Temperature Range	Topr	-25 to +85	°C
Storage Temperature Range	Tstg	-40 to +85	°C
Lead Soldering Temperature (1/16 inch from body for 5 sec.)	Tsol	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	Pc	75	mW

Electro Optical Characteristics

(Ta=25°C)

Parameter	Symbol	MIN	TYP	MAX	Unit	Condition
Collector-Emitter Breakdown Voltage	BV_{CEO}	30			V	$I_C=100\mu A$ $E_e=0mW/cm^2$
Emitter-Collector Breakdown Voltage	BV_{ECO}	5			V	$I_E=100\mu A$ $E_e=0mW/cm^2$
Collector-Emitter Saturation Voltage	$V_{CE(s)}$			0.4	V	$I_C=2mA$ $I_B=100\mu A$
Rise Time	t_R		15		μS	$V_{CE}=5V$ $I_C=1mA$ $R_L=1000\Omega$
Fall Time	t_F		15			
Collector Dark Current	I_{CEO}			100	nA	$V_{CE}=20V$ $E_e=0mW/cm^2$
On State Collector Current	$I_{C(on)}$	1.0	1.5		mA	$V_{CE}=5V$ $E_e=1mW/cm^2$
Wavelength of Peak Sensitivity	λ_p		980		nm	-----
Rang of Spectral Bandwidth	$\lambda_{0.5}$		770-1200		nm	-----

Typical Electrical/Optical/Characteristics Curves





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Reliability

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

Confidence level : 90%

LTPD : 10%

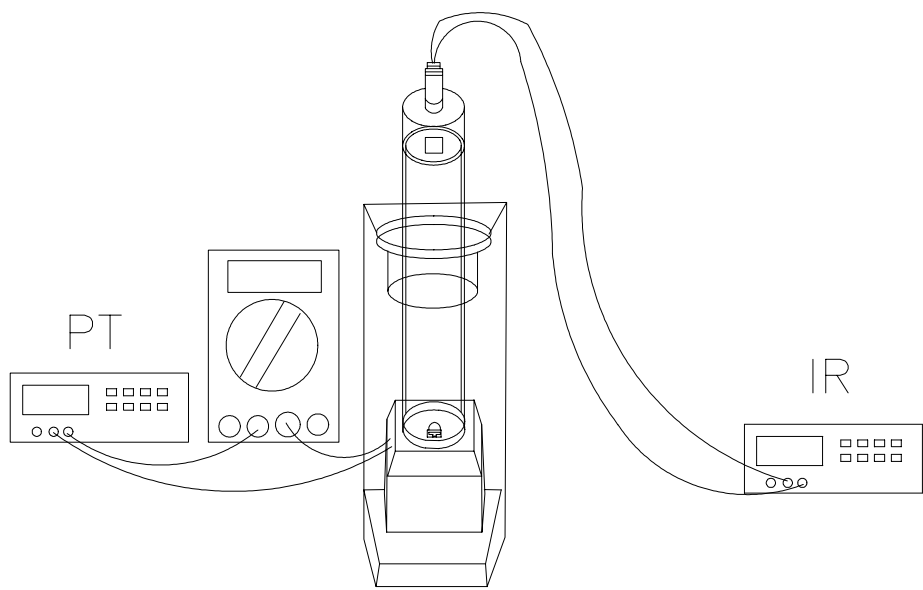
Test Items	Test Conditions	Failure Judgement Criteria	Samples(n) Defective(c)
Operation life	$V_{CE}=5V$, $T_a : 25^{\circ}C$ 1000hrs	$I_{C(on)} \leq L \times 0.8$ L : Lower specification limit	n =22 , c=0
Temperature cycle	1 cycle $-55^{\circ}C$ to $+25^{\circ}C$ to $+85^{\circ}C$ (30min) (5min) (30min)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



Test Method For On State Collector Current

Condition : H=1m W/c m² , V_{CE}=5V

Test Item : Collector Current (unit : mA)



Supplements

1.Parts

(1) Chip

Type	Material	Wavelength of Peak Sensitivity
PT	Silicon	980nm

(2) Material

Type	Lead Frame	Wire	Package
Material	CAC92-H	Gold	Epoxy



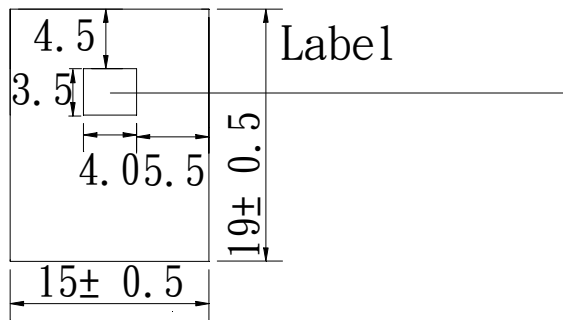
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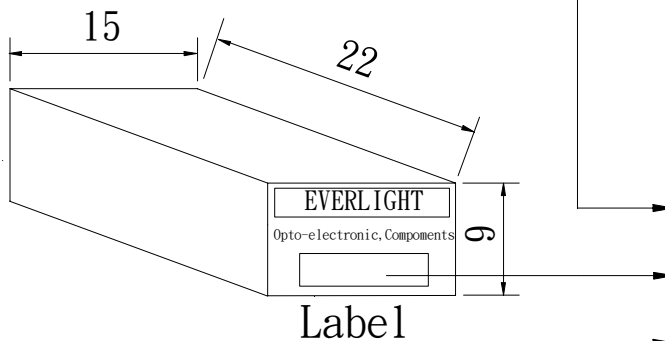
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Packing Specifications

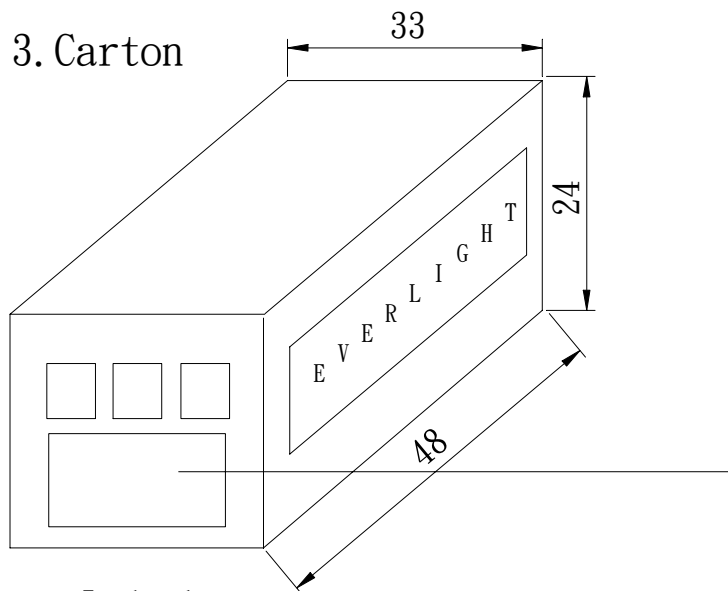
1. Bag



2. Box



3. Carton



Label

UNIT : cm

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

1.1K Pcs/1Bag , 20 Bags/1Box

2.10Boxes/1Carton