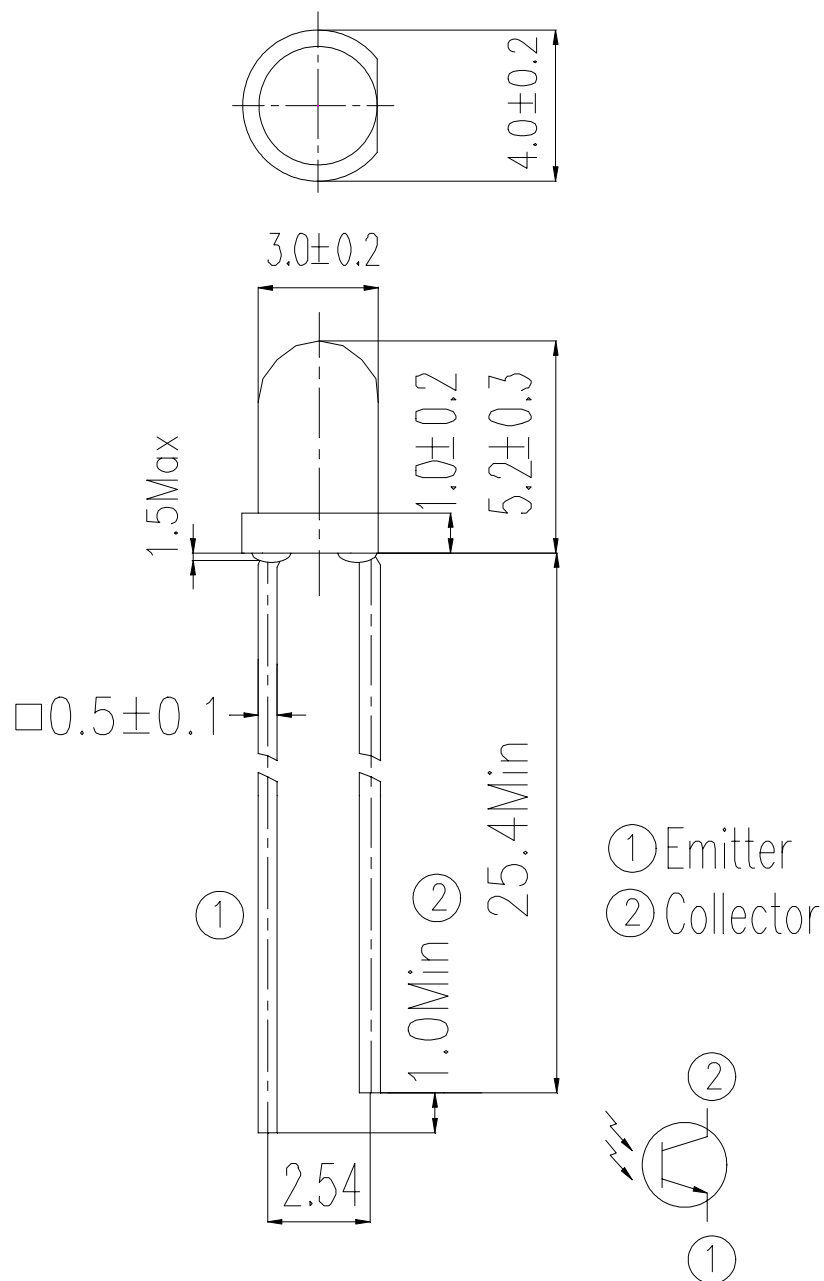




EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DPT-020-100 REV: 1.0
MODEL NO: PT204-6B/T13 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](http://www.everlight.com)



EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DPT-020-100 REV: 1.0

MODEL NO: PT204-6B/T13 ECN: _____ Page: 2/7

◎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 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

PT204-6B/T13 is a high speed and high sensitive NPN silicon phototransistor molded in a standard $\phi 3$ mm package . The package is an IR filter, spectrally match to IR emitters ($\lambda_p > 840\text{nm}$).

Features

- High photo sensitivity
- Fast response times

Applications

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



EVERLIGHT ELECTRONICS CO., LTD.

Device Number: DPT-020-100REV: 1.0MODEL NO: PT204-6B/T13ECN: Page: 3/7**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	T_{opr}	-25 to +85	°C
Storage Temperature Range	T_{stg}	-40 to +85	°C
Lead Soldering Temperature (1/16 inch from body for 5 sec.)	T_{sol}	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	P_C	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	$I_{C(on)}$	2.0	4.0		mA	$V_{CE}=5V$ $E_e=500LX$
Wavelength of Peak Sensitivity	λ_p		980		nm	-----
Rang of Spectral Bandwidth	$\lambda_{0.5}$	840		1200	nm	-----



Device Number: DPT-020-100 REV: 1.0
MODEL NO: PT204-6B/T13 ECN: Page: 4/7

Typical Electrical/Optical/Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

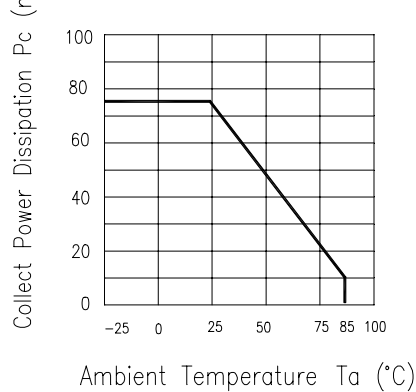


Fig.2 Collector Dark Current vs. Ambient Temperature

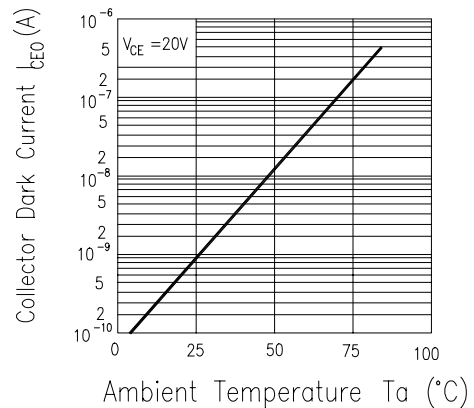


Fig. 3 Relative Collector Current vs. Ambient Temperature

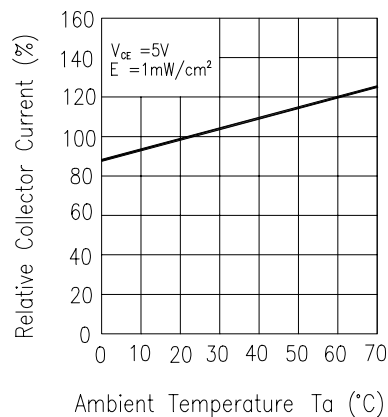


Fig.4 Collector Current vs. Irradiance

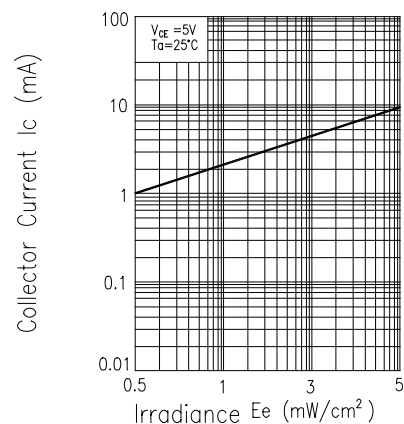


Fig.5 Spectral Sensitivity

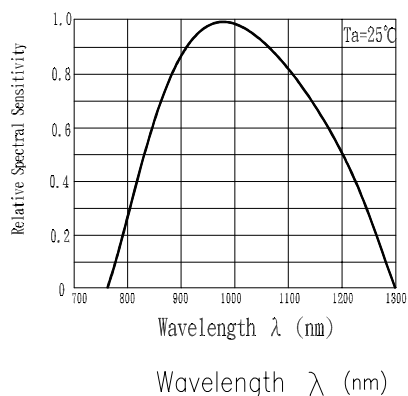
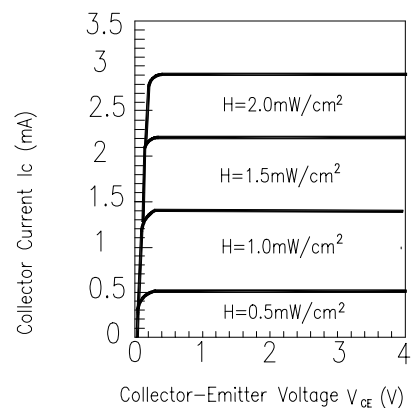


Fig.6 Collector Current vs. Collector-Emitter Voltage





EVERLIGHT ELECTRONICS CO., LTD.

MODEL NO: PT204-6B/T13 Device Number: DPT-020-100 REV: 1.0
ECN: Page: 5/7

Reliability

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

Confidence level : 90%

LTPD : 10%

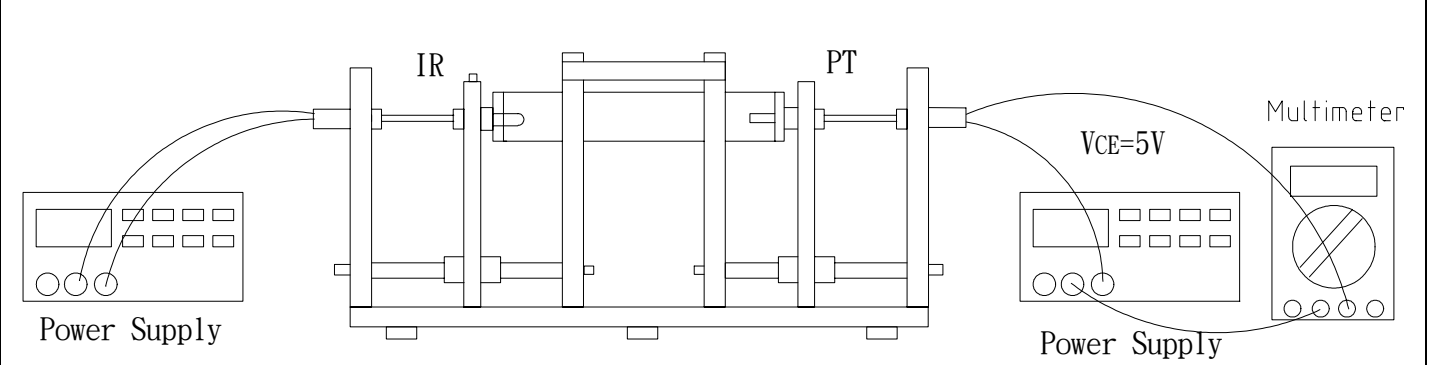
Test Items	Test Conditions	Failure Judgement Criteria	Samples(n)
			Defective(c)
Operation life	V _{CE} =5V , Ta : 25℃ 1000hrs	$I_{C(on)} \leq L \times 0.8$ L : Lower specification limit	n =22 , c=0
Temperature cycle	1 cycle -55℃ to +25℃ to +85℃ (30min) (5min) (30min) 50 cycle test		n =22 , c=0
Thermal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



Device Number: DPT-020-100 REV: 1.0
MODEL NO: PT204-6B/T13 ECN: Page: 6/7

Test Method For On State Collector Current

Condition : H=1m W/c m² , V_{CE}=5V
Test Item : Collector Current (unit : mA)



Rankings

Parameter	Symbol	Min	Max	Unit	Test Condition
A	I _{C(ON)}	2.0	5.0	mA	V _{CE} =5V Ee=500LX
B		3.0	8.0		

Supplements

1.Parts

(1) Chip

Type	Material	Wavelength of Peak Sensitivity
PT	Silicon	980nm

(2) Material

Type	Lead Frame	Wire	Package
Material	SPCC	Gold	Epoxy

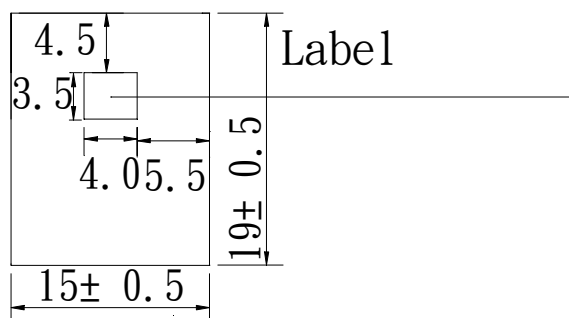


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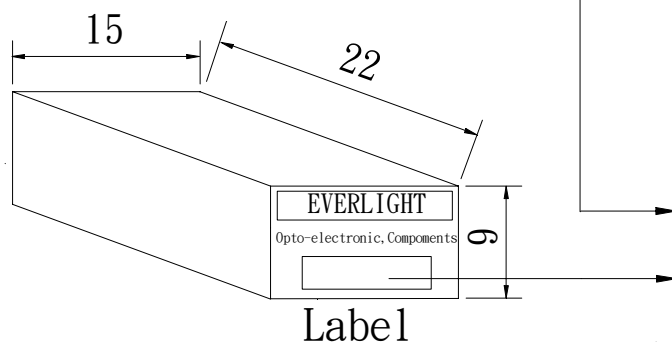
Device Number: DPT-020-100 REV: 1.0
MODEL NO: PT204-6B/T13 ECN: Page: 7/7

Packing Specifications

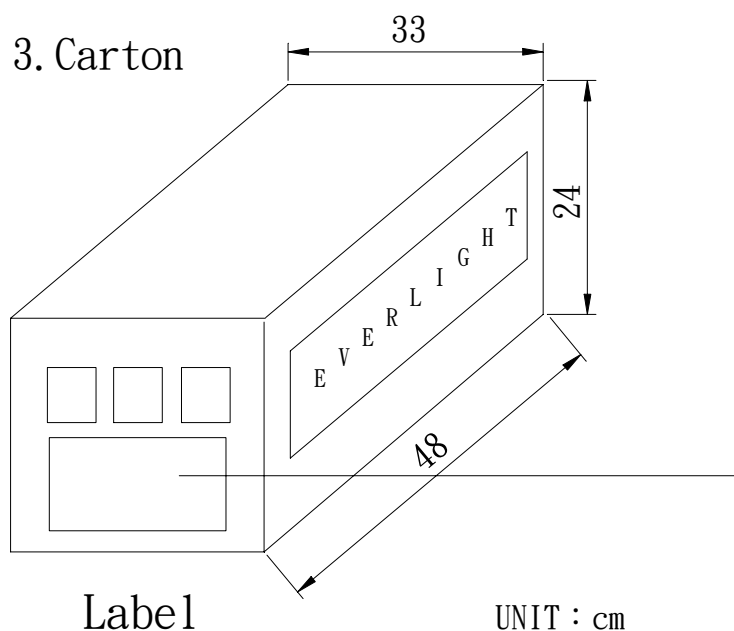
1. Bag



2. Box



3. Carton



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

1.500Pcs/1Bag , 6Bags/1Box

2.10Boxes/1Carton