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EVERLIGHT ELECTRONICS CO., LTD.

DEVICE NUMBER : DPT-255-079 REV : 1.1
ECN : PAGE : 1/7

Phototransistor

MODEL NO : PT2559B/L2/H2

■ Features :

- Wide angle of half sensitivity $\theta = \pm 65^{\circ}$
- High sensitivity
- Fast response time
- Cutting Wavelength λp=840nm

■ Description :

EVERLIGHT Dual Photo Transistor(**PT2559B/L2/H2)** is a high speed and high sensitivity dual photo transistor in a flat side view plastic package.

The epoxy package spectrally matched to IR emitter (λp=940nm)

■ Applications :

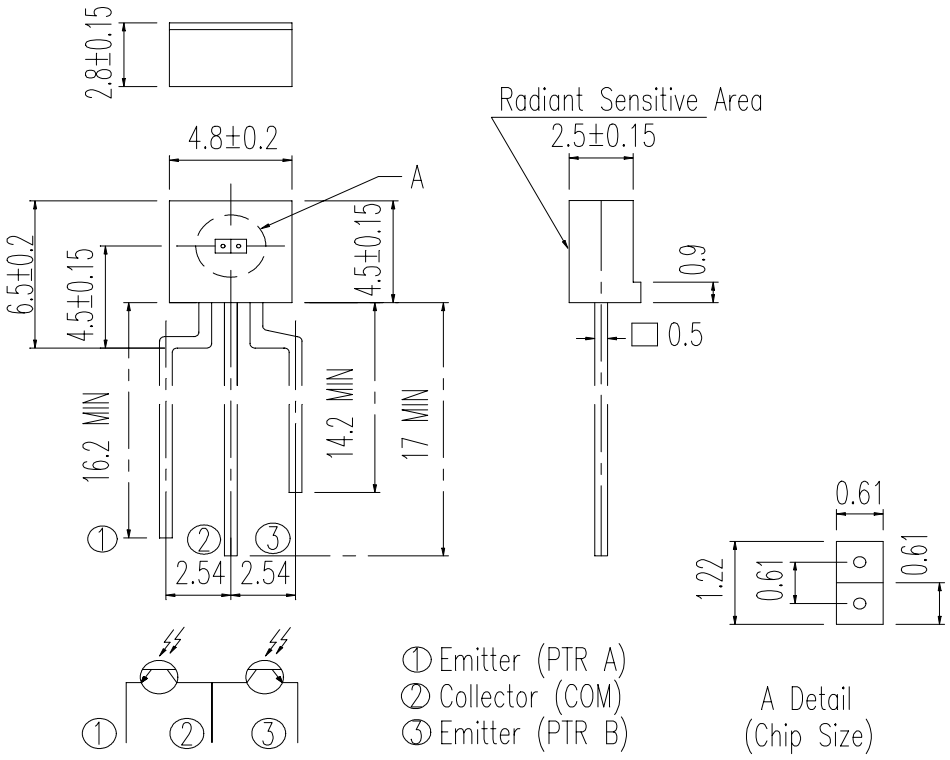
- Mouse
- Optoelectronic Switch

PART NO.	CHIP MATERIAL	LENS COLOR
PT	Silicon	Black

Phototransistor

MODEL NO : PT2559B/L2/H2

■ Package Dimension :



■ Notes :

1.All dimensions are in millimeter.

2. Lead spacing is measured where the lead emerge from the package.

3. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.

4.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.

5.When using this product , please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERIGHT 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.

6.Tolerance is ±0.15mm unless otherwise note.

Phototransistor

MODEL NO : PT2559B/L2/H2

■ Absolute Maximum Ratings at T_a = 25℃

Parameter	Symbol	Rating	Unit	Notice
Collector power dissipation	Pd	75	mW	
C-E Voltage	V_{ce}	30	V	
E-C Voltage	V_{ec}	5	V	
Operating Temperature	Topr	-25 ~ +85	℃	
Storage Temperature	Tstg	-40 ~ +85	℃	
Soldering Temperature (1/16 inch from body for 5 sec)	Tsol	260	℃	

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector dark current	I_{ceo}			100	nA	V_{ce}=20V ,E_e=0mW/cm^2
C-E Saturation voltage	$V_{ce(sat.)}$			0.2	V	I_C=2mA ,IB=100μA
C-E Breakdown voltage	BV_{ceo}	30			V	I_C=100μA ,IB=0
E-C Breakdown voltage	BV_{eco}	5			V	I_e=100μA ,IB=0
On stat ecollector current	I_C(ON)	129		944	μA	E_e=0.555mW/cm^2,V_{ce}=5V
Rise Time	t_r		15		μs	V_{ce}=5V I_c=1mA RL=1000Ω
Fall Time	t_f		15		μs	

Phototransistor

MODEL NO : PT2559B/L2/H2

■ Typical Electrical/Optical/Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

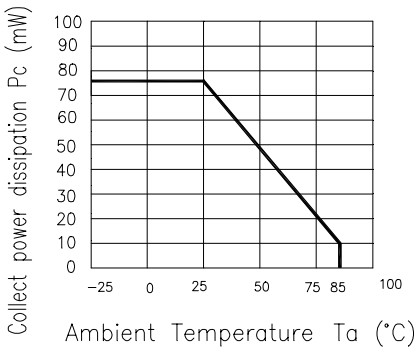


Fig.2 Collector Dark Current vs. Ambient Temperature

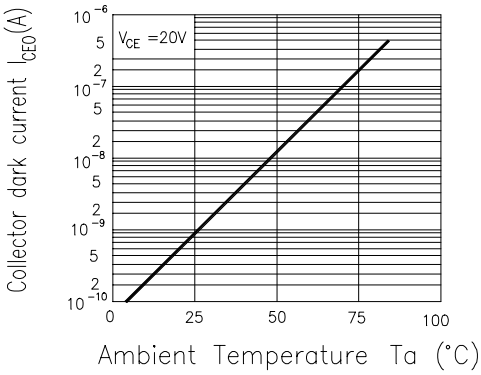


Fig. 3 Relative Collector Current vs. Ambient Temperature

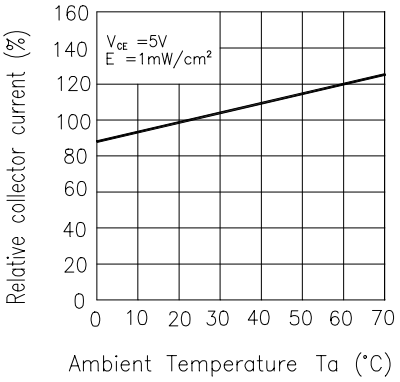


Fig.4 Collector Current vs. Irradiance

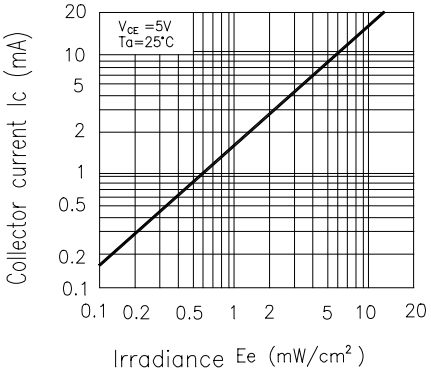


Fig.5 Spectral Sensitivity

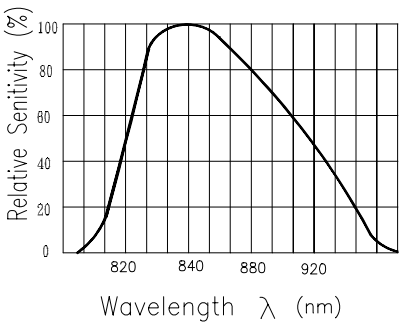
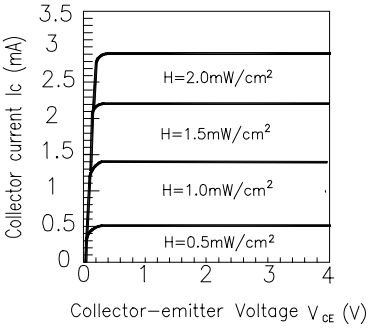


Fig.6 Collector Current vs. Collector−emitter Voltage



Phototransistor

MODEL NO : PT2559B/L2/H2

■ Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.
Confidence level:90%
LTPD:10%

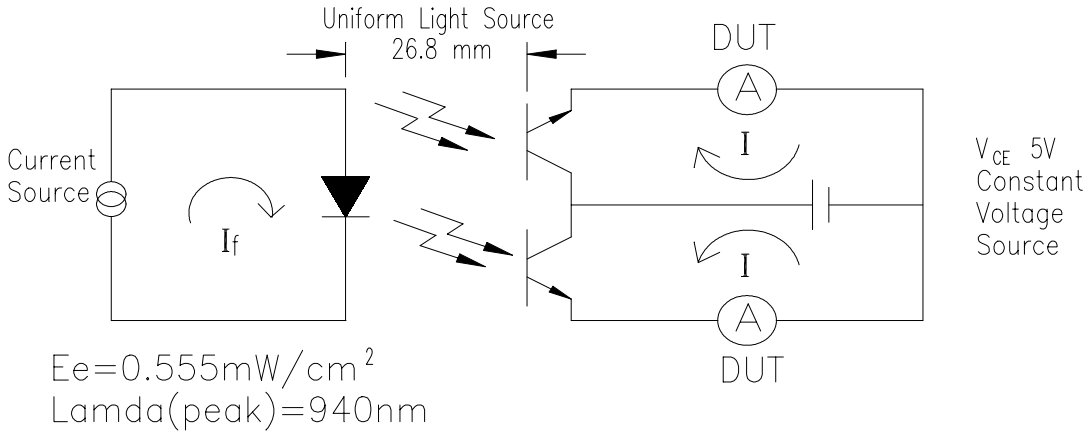
NO.	Item	Test Conditions	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	**Solderability**	TEMP : 230℃ ± 5 ℃	5 secs	22 PCs	More than 90% of lead to be covered by soldering	0/1
2	**Temperature Cycle**	H : +85℃ 30 mins ↕ 5 mins L : -55℃ 30 mins	50 cycles	22 PCs	$I_R \geqq U \times 2$ $Ee \leqq L \times 0.8$ $V_F \geqq U \times 1.2$	0/1
3	**Thermal Shock**	H : +100℃ 5 mins ↕ 10 secs L : -10℃ 5 mins	50 cycles	22 PCs	U :Upper specification limit L :Lower specification limit	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**	I_F=20mA	1000 hrs	22 PCs		0/1
7	**High Temperature / High Humidity**	85℃ / 85% R.H.	1000 hrs	22 PCs		0/1

Phototransistor

MODEL NO : PT2559B/L2/H2

Test Method :

The Light current testing method for PTR:



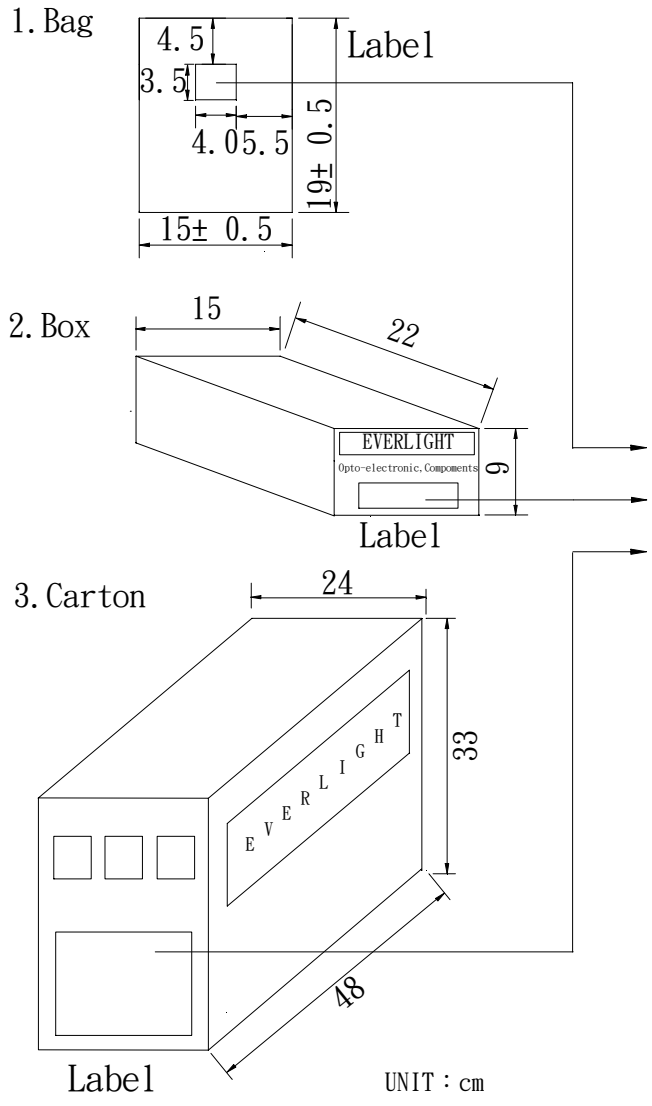
Ranking

Color Code	Parameter	Symbol	Min	Max	Unit	Test Condition
Red	A1	$I_{C(ON)}$	129	226	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Blue	A2	$I_{C(ON)}$	195	306	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Yellow	A3	$I_{C(ON)}$	262	380	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Silver	A4	$I_{C(ON)}$	330	461	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Green	A5	$I_{C(ON)}$	398	544	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Purple	A6	$I_{C(ON)}$	468	625	μA	Ee=0.555mw/c㎡ V_{CE}=5V
White	A7	$I_{C(ON)}$	536	703	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Brown	A8	$I_{C(ON)}$	604	785	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Orange	A9	$I_{C(ON)}$	673	862	μA	Ee=0.555mw/c㎡ V_{CE}=5V
Gold	A10	$I_{C(ON)}$	742	944	μA	Ee=0.555mw/c㎡ V_{CE}=5V

Phototransistor

MODEL NO : PT2559B/L2/H2

■ 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. 500 Pcs / 1 Bag，10 Bags / 1Box
2. 10 Boxess / 1Carton