



# EVERLIGHT ELECTRONICS CO., LTD.

DEVICE NUMBER : DRX-818-082      REV : 1.0  
ECN : \_\_\_\_\_      PAGE : 1/7

## Photointerrupter

MODEL NO : ITR9818

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### ■ Features :

- Cutting visible light
- High sensing accuracy
- Fast response time

### ■ Description :

IR: The IR is a high intensity infrared emitting diode and is spectrally matched to silicon photo transistor.

PT: The PT is a high speed and high sensitivity dual photo transistor, in a flat side View plastic package.

### ■ Applications :

- Mouse
- Opto-electronic switches

PART NO.	CHIP	LENS COLOR
	MATERIAL	
IR	GaAs	CLEAR
PT	Silicon	BLACK

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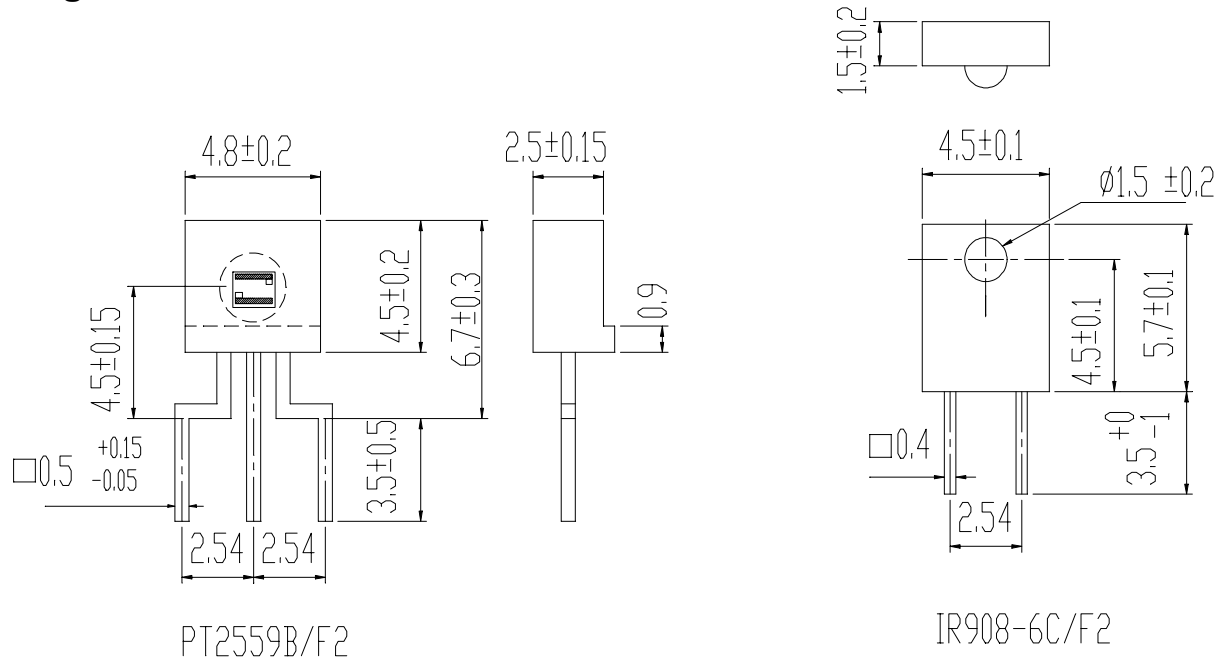
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### ■ Package Dimension :



### ■ Notes :

1. All dimensions are in millimeter.
2. General tolerance:  $\pm 0.1$  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. 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.



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### ■ Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	P <sub>d</sub>	75	mW
	Reverse Voltage	V <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	50	mA
	Peak Forward Current Pulse width ≤100μs, Duty cycle=1%	I <sub>FP</sub>	1	A
Output	Collector Power Dissipation	P <sub>C</sub>	75	mW
	Collector Current	I <sub>C</sub>	20	mA
	Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	V <sub>ECO</sub>	5	V
Operating Temperature		Topr	-25~+85	°C
Storage Temperature		Tstg	-40~+85	°C
Lead 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
Input	Forward Voltage	V <sub>F</sub>	-	1.2	1.5	V	I <sub>F</sub> =20mA
	Reverse Current	I <sub>R</sub>	-	-	10	μA	V <sub>R</sub> =5V
	Peak Wavelength	λ <sub>p</sub>	-	940	-	nm	I <sub>F</sub> =20mA
	View Angle	2 <sup>3</sup> 1/2	-	60	-	Deg	I <sub>F</sub> =20mA
Output	Collector Dark Current	I <sub>CEO</sub>	-	-	100	nA	V <sub>CE</sub> =20V Ee=0mW/cm <sup>2</sup>
Transfer Characteristic	C-E Saturation Voltage	V <sub>CE(sat)</sub>	-	-	0.4	V	I <sub>C</sub> =0.5mA Ee=10mW/cm <sup>2</sup>
	Collector Current	I <sub>C(ON)</sub>	650	-	900	μA	V <sub>CE</sub> =3.5V I <sub>F</sub> =4mA, d=6mm
	Rise time	t <sub>r</sub>	-	15	-	μsec	V <sub>CE</sub> =5V I <sub>C</sub> =100μA R <sub>L</sub> =1KΩ
	Fall time	t <sub>f</sub>	-	15	-	μsec	



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### ■ Typical Electrical/Optical/Characteristics Curves For IR



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### ■ Typical Electrical/Optical/Characteristics Curves For PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

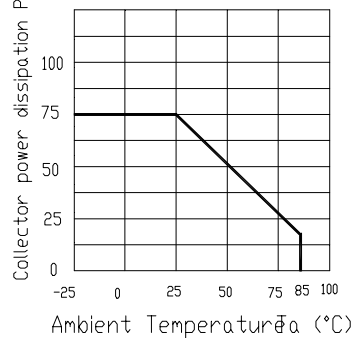


Fig.2 Collector Dark Current vs. Ambient Temperature

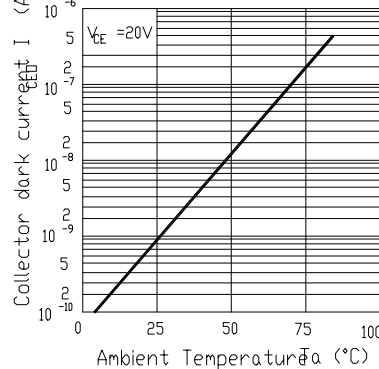


Fig.3 Spectral Sensitivity

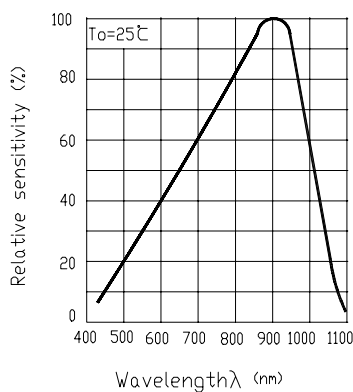
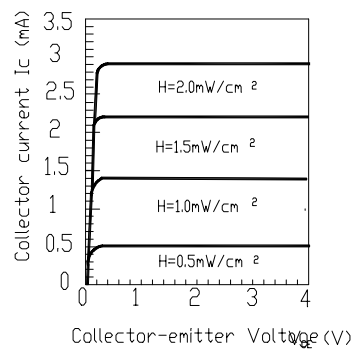


Fig.4 Collector Current vs. Collector-emitter Voltage



### ■ Typical Electrical/Optical/Characteristics Curves For ITR

Fig.1 Relative Collector Current vs. Shield Distance(1)

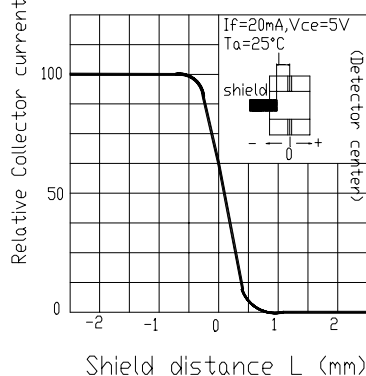
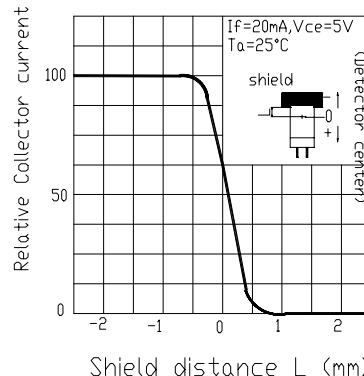


Fig.2 Relative Collector Current vs. Shield Distance(2)



# Photointerrupter





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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/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 sec	22 PCs	$I_{c(on)} \leq L \times 0.8$  L :Lower specification limit	0/1
2	Temperature Cycle	H : +85°C      30 min  5 min  L : -55°C      30 min	50 cycle	22 PCs		0/1
3	Thermal Shock	H : +100°C      5 min  10 sec  L : -10°C      30 min	50 cycle	22 PCs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 PCs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 hrs	22 PCs		0/1
6	DC Operating Life	V <sub>CE</sub> =5V	1000 hrs	22 PCs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 PCs		0/1



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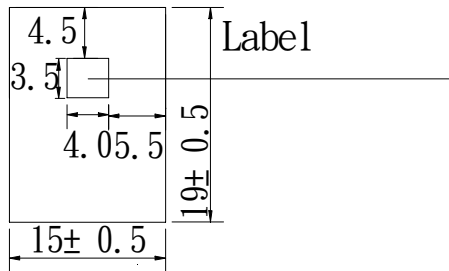
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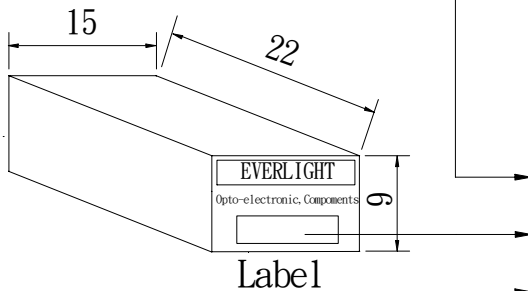
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### ■ Packing Specifications

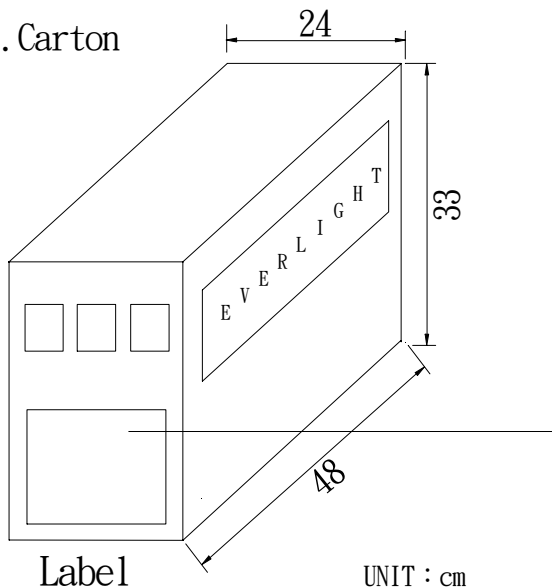
1. Bag



2. Box



3. Carton



UNIT : cm

EVERLIGHT

CPN:  
P/N:5809818000



ITR9818

QTY:  
LOT NO:EL



CAT:  
HUE:  
REF:

MADE IN TAIWAN

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. 5000 Pairs /1Box
2. 10 Boxes /1Carton