

**EVERLIGHT**

EVERLIGHT ELECTRONICS CO., LTD.

**Technical Data Sheet**  
**OPTO INTERRUPTER ITR**

ITR9807

**Features**

- Fast response time
- High sensitivity
- Small package
- Pb free
- The product itself will remain within RoHS compliant version.



**Descriptions**

The ITR9807 consists of an infrared emitting Diode and a silicon phototransistor encased in a black Thermo-plastic housing and wired out with flat cable. For additional component information, please refer to IR928-6C and PT928-6C.

**Applications**

- Printer
- Optoelectronic Switches
- Scanner

**Device Selection Guide**

Device No.	Chip Material
IR	GaAlAs
PT	Silicon



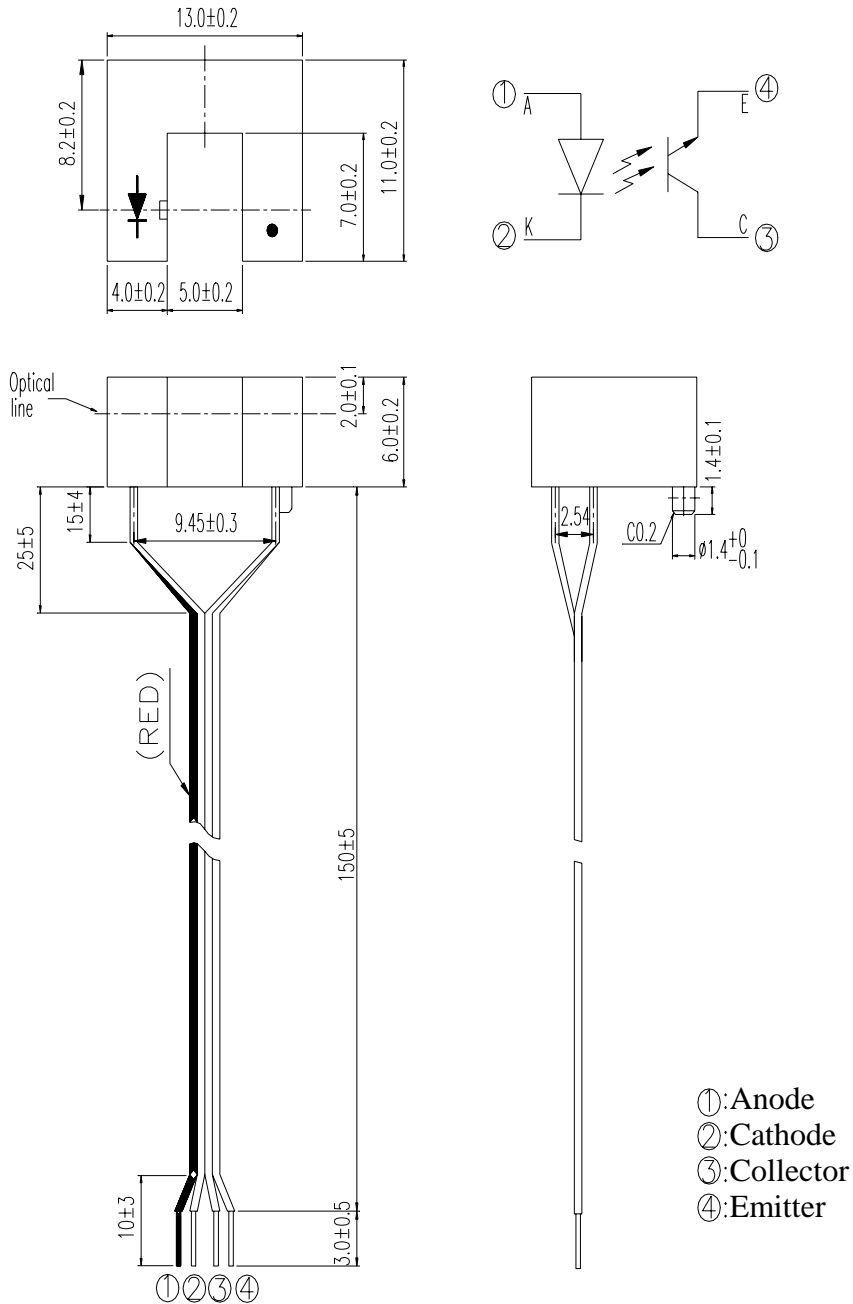


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Package Dimensions



- Notes:** 1. All dimensions are in millimeters  
 2. Tolerances unless dimensions  $\pm 0.3$ mm

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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	Pd	75	mW
	Reverse Voltage	V <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	50	mA
	Peak Forward Current (*1) Pulse width ≤ 100 μs, Duty cycle=1%	I <sub>FP</sub>	1	A
	Collector Power Dissipation	P <sub>C</sub>	50	mW
Output	Collector Current	I <sub>C</sub>	30	mA
	Collector-Emitter Voltage	B V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	B V <sub>ECO</sub>	5	V
	Operating Temperature	Topr	-25~+85	°C
Storage Temperature	Tstg	-30~+85	°C	
Lead Soldering Temperature (*2)	Tsol	260	°C	

(\* 1) tw=100 μsec., T=10 msec.

(\* 2) t=5 Sec

**Electro-Optical Characteristics (Ta=25°C)**

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V <sub>F</sub>	---	1.2	1.6	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
Output	Dark Current	I <sub>CEO</sub>	---	---	100	nA	V <sub>CE</sub> =10V
	C-E Saturation Voltage	V <sub>CE(sat)</sub>	---	---	0.4	V	I <sub>C</sub> =2mA ,Ee=1mW/cm <sup>2</sup>
Transfer Characteristics	Collector Current	I <sub>C(ON)</sub>	0.5	---	---	mA	V <sub>CE</sub> =5V, I <sub>F</sub> =20mA
	Rise time	t <sub>r</sub>	---	20	---	μsec	V <sub>CE</sub> =2V I <sub>C</sub> =1mA
	Fall time	t <sub>f</sub>	---	20	---	μsec	R <sub>L</sub> =1KΩ



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Typical Electrical/Optical/Characteristics Curves for IR

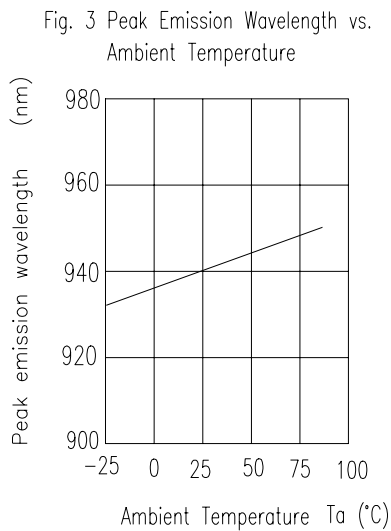
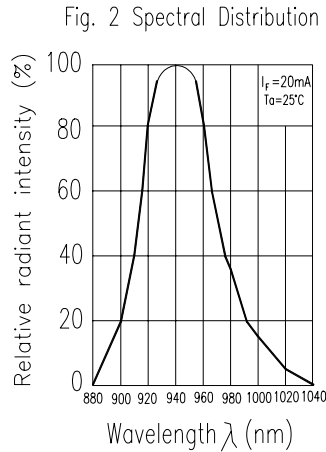
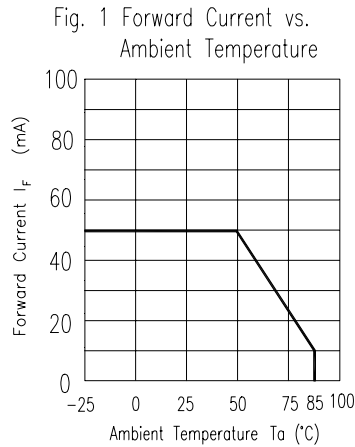


Fig. 4 Forward Current vs. Forward Voltage

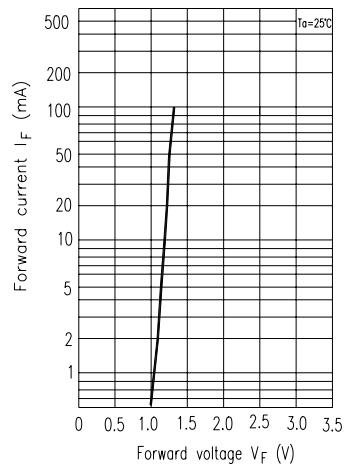


Fig. 5 Relative Radiant Flux vs. Ambient Temperature

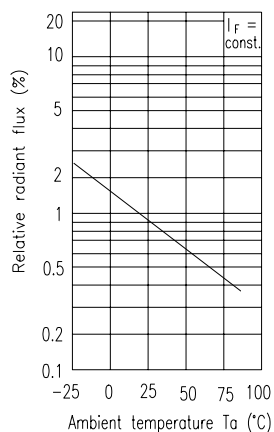
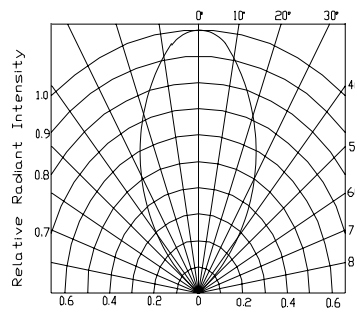


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



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**Typical Electrical/Optical/Characteristics Curves for PT**

Fig.1 Collector Power Dissipation vs. Ambient Temperature

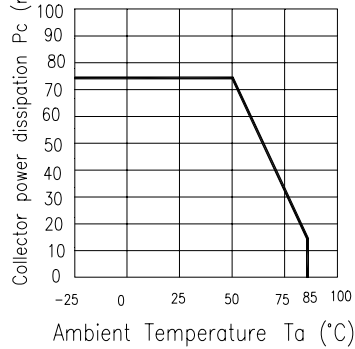


Fig.2 Collector Dark Current vs. Ambient Temperature

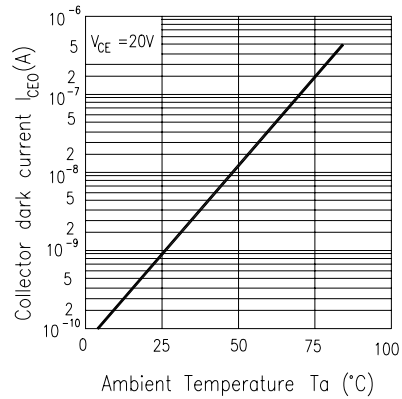


Fig. 3 Relative Collector Current vs. Ambient Temperature

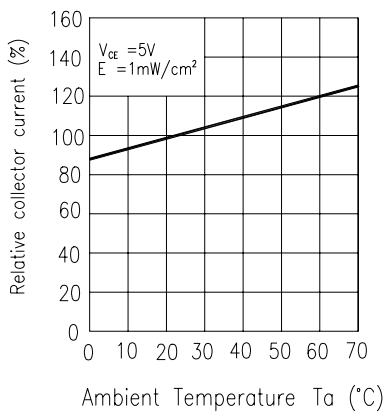


Fig.4 Collector Current vs. Irradiance

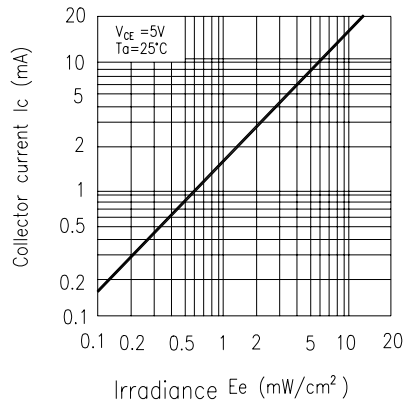


Fig.5 Spectral Sensitivity

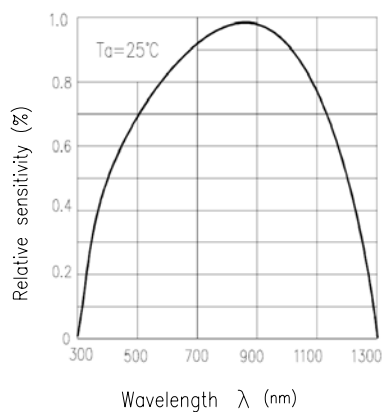
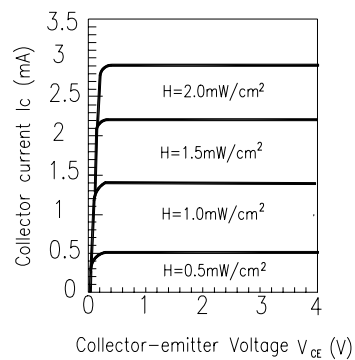


Fig.6 Collector Current vs. Collector-emitter Voltage





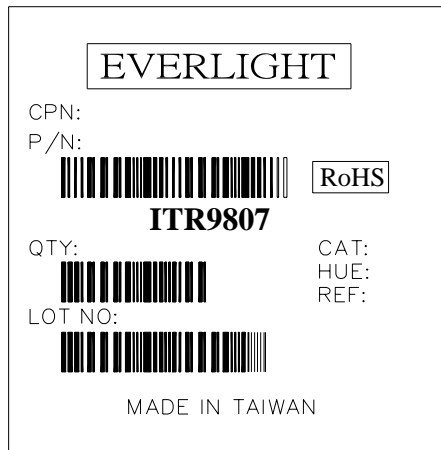
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**■ Packing Quantity Specification**

100 pcs/1bag , 6 bags/1box , 10 boxes/1carton

**■ Label Form Specification**



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

**Notes**

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using 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.
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