

**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**

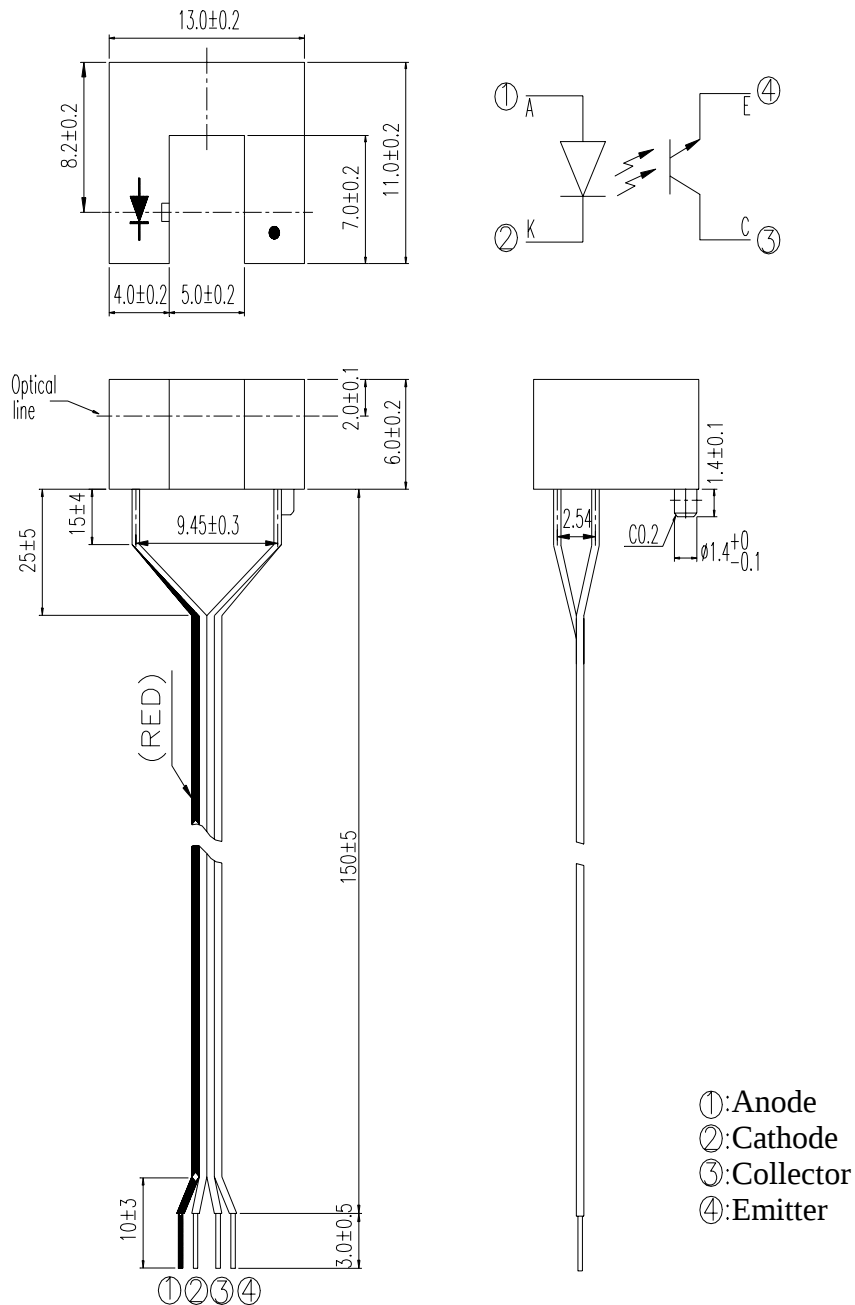
The ITR9807 consists of an infrared emitting Diode and a silicon phototransistor encased in a black Thermo-plastic housing and wired out with flat cable. For additional component information, please refer to IR928-6C and PT928-6C.

**Applications**

- Printer
- Optoelectronic Switches
- Scanner

**Device Selection Guide**

| Device No. | Chip Material |
|------------|---------------|
| IR         | GaAlAs        |
| PT         | Silicon       |

**Technical Data Sheet**
**OPTO INTERRUPTER ITR**
**ITR9807**
**Package Dimensions**


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

# Technical Data Sheet

## OPTO INTERRUPTER ITR

ITR9807

### 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)<br>Pulse width ≤ 100 μs, Duty cycle=1% | I <sub>FP</sub>    | 1       | A    |
| Output                          | Collector Power Dissipation                                      | P <sub>C</sub>     | 50      | mW   |
|                                 | 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<br>Ee=1mW/cm <sup>2</sup>                     |
| Transfer Characteristics | Collector Current      | I <sub>C(ON)</sub>   | 0.5  | ---  | ---  | mA   | V <sub>CE</sub> =5V,<br>I <sub>F</sub> =20mA                      |
|                          | Rise time              | t <sub>r</sub>       | ---  | 20   | ---  | μsec | V <sub>CE</sub> =2V<br>I <sub>C</sub> =1mA<br>R <sub>L</sub> =1KΩ |
|                          | Fall time              | t <sub>f</sub>       | ---  | 20   | ---  | μsec |                                                                   |

**Technical Data Sheet**
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**ITR9807**
**Typical Electrical/Optical/Characteristics Curves for IR**

Fig. 1 Forward Current vs. Ambient Temperature

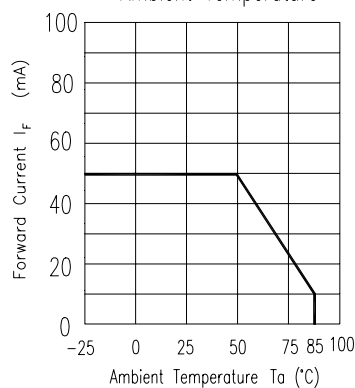


Fig. 2 Spectral Distribution

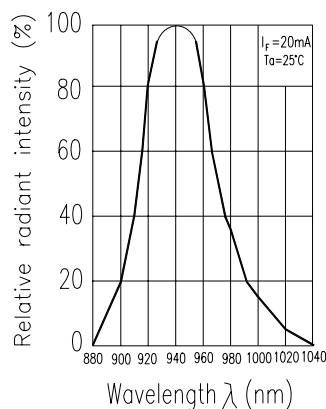


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

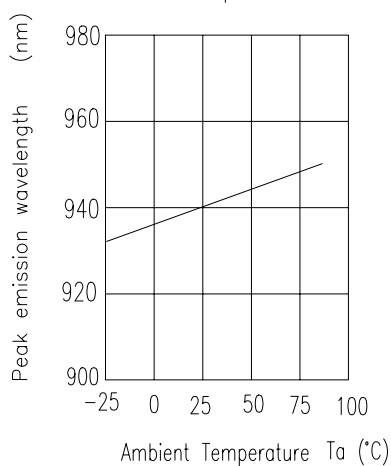


Fig. 4 Forward Current vs. Forward Voltage

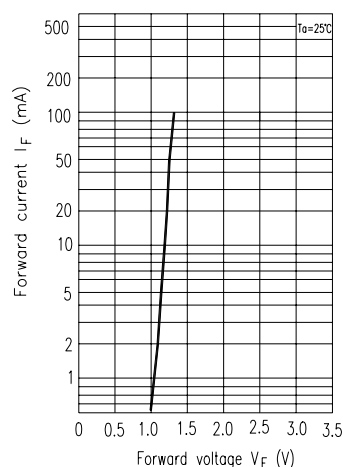


Fig. 5 Relative Radiant Flux vs. Ambient Temperature

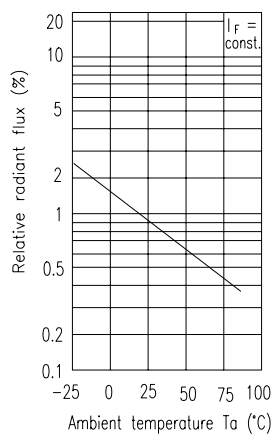
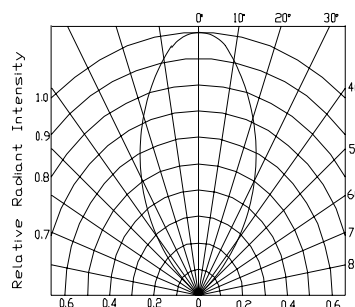


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



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

Fig.1 Collector Power Dissipation vs. Ambient Temperature

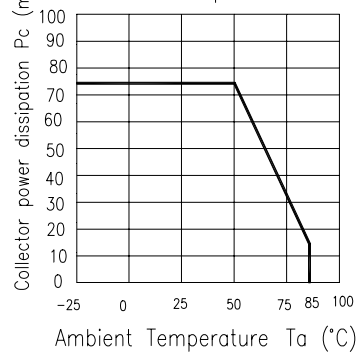


Fig.2 Collector Dark Current vs. Ambient Temperature

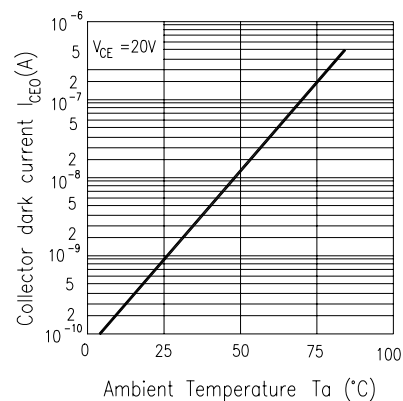


Fig. 3 Relative Collector Current vs. Ambient Temperature

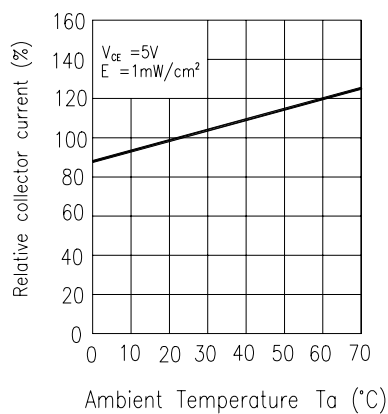


Fig.4 Collector Current vs. Irradiance

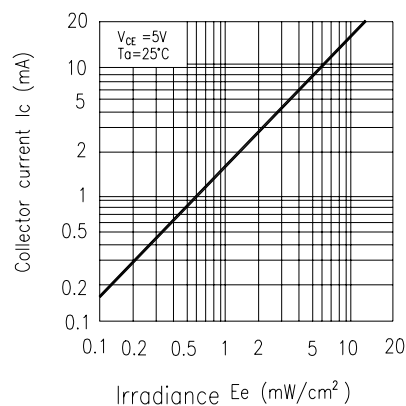


Fig.5 Spectral Sensitivity

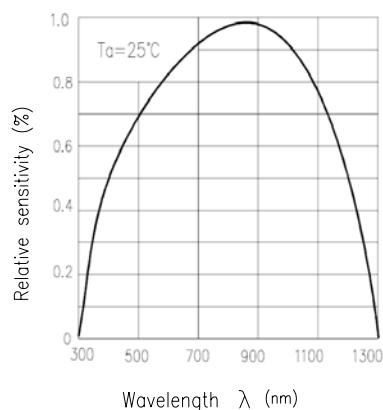
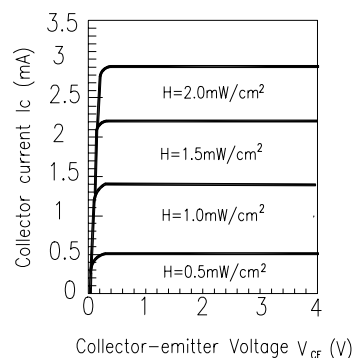


Fig.6 Collector Current vs. Collector-emitter Voltage



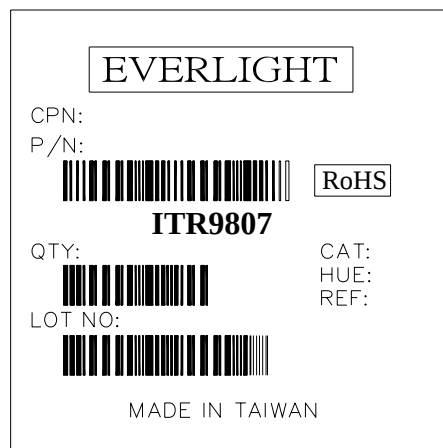
**Technical Data Sheet**  
**OPTO INTERRUPTER ITR**

ITR9807

**■ 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.
3. 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.

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