



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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OPTICAL SENSORS

ITR9707

■ Features

- Fast response time
- High analytic
- Cut-off visible wavelength $\lambda_p=940\text{nm}$
- High sensitivity
- Pb free
- This product itself will remain within RoHS compliant version

■ Descriptions

- The ITR9707 consist of an infrared emitting diode and an NPN silicon phototransistor, encased side-by-side on converging optical axis in a black thermoplastic housing,
- The phototransistor receives radiation from the IR LED only . This is the normal situation.
- But when an object is in between , phototransistor could not receives the radiation.
- For additional component information , please refer to IR908-7C and PT908-7C

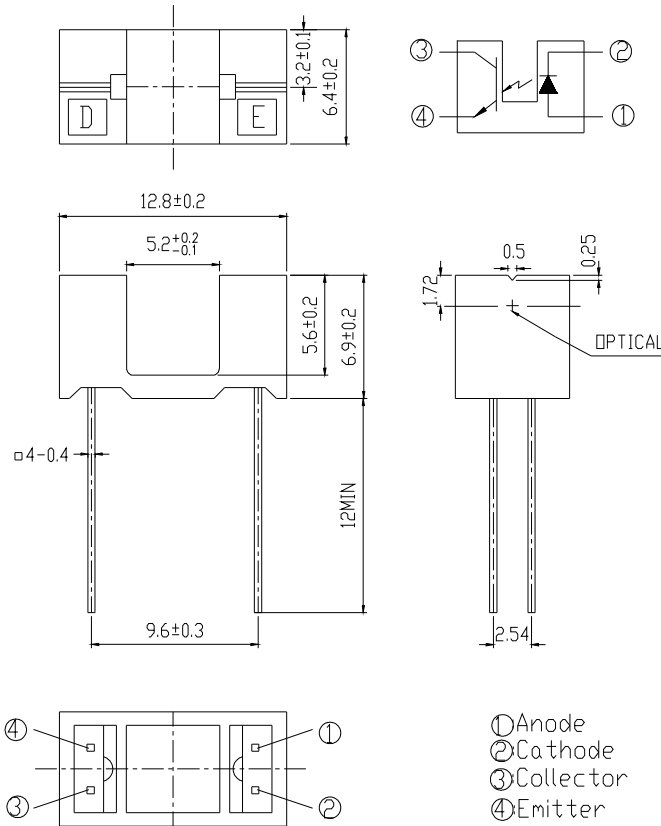
■ Applications

- Mouse Copier
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

■ Device Selection Guide

| Device No. | Chip Material | LENS COLOR |
|------------|---------------|-------------|
| IR908-7C | GaAlAs | Water clear |
| PT908-7C | Silicon | Water clear |

Package Dimensions



Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions ± 0.2 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.

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 _R | 5 | V |
| | Forward Current | I _F | 50 | mA |
| | Peak Forward Current (*1) Pulse width ≤ 100 μs, Duty cycle=1% | I _{FP} | 1 | A |
| Output | Collector Power Dissipation | P _C | 75 | mW |
| | Collector Current | I _C | 20 | mA |
| | Collector-Emitter Voltage | V _{CEO} | 30 | V |
| | Emitter-Collector Voltage | V _{ECO} | 5 | V |
| Operating Temperature | | T _{opr} | -25~+85 | °C |
| Storage Temperature | | T _{stg} | -40~+100 | °C |
| Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds) | | T _{sol} | 260 | °C |

(*1) $t_w=100 \mu \text{sec.}$, $T=10 \text{msec.}$ (*2) $t=5 \text{Sec}$

Electro-Optical Characteristics (Ta=25°C)

| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------|------------------------|----------------------|------|------|------|------|---|
| Input | Forward Voltage | V _F | --- | 1.2 | 1.5 | V | I _F =20mA |
| | Reverse Current | I _R | --- | --- | 10 | μA | V _R =5V |
| | Peak Wavelength | λ _p | --- | 940 | --- | nm | I _F =20mA |
| | View Angle | 2θ _{1/2} | --- | 60 | --- | Deg | I _F =20mA |
| Output | Dark Current | I _{CEO} | --- | --- | 100 | nA | V _{CE} =20V, Ee=0mW/cm ² |
| | C-E Saturation Voltage | V _{CE(sat)} | --- | --- | 0.4 | V | I _C =2mA Ee=1mW/cm ² |
| Transfer Characteristics | Collect Current | I _{C(ON)} | 0.50 | --- | --- | mA | V _{CE} =5V I _F =20mA |
| | Rise time | t _r | --- | 15 | --- | μsec | V _{CE} =5V I _C =1mA |
| | Fall time | t _f | --- | 15 | --- | μsec | R _L =1KΩ |

Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs. Ambient Temperature

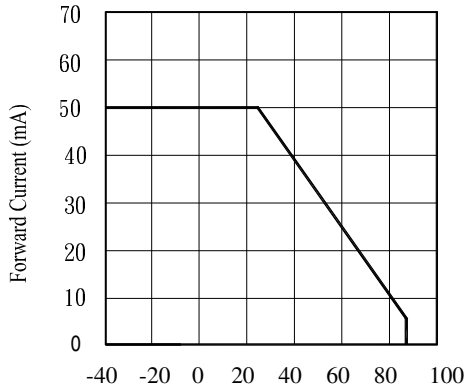


Fig.2 Spectral Distribution

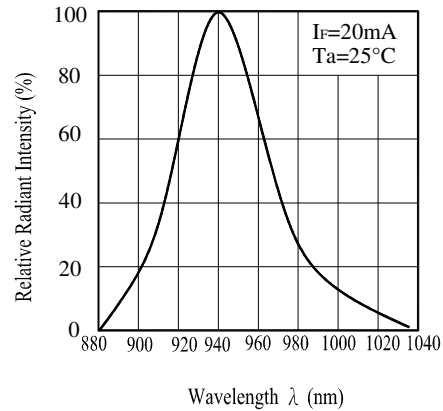


Fig.3 Peak Emission Wavelength

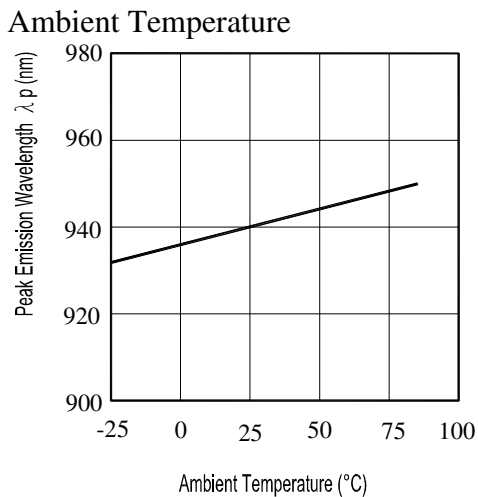


Fig.4 Forward Current vs. Forward Voltage

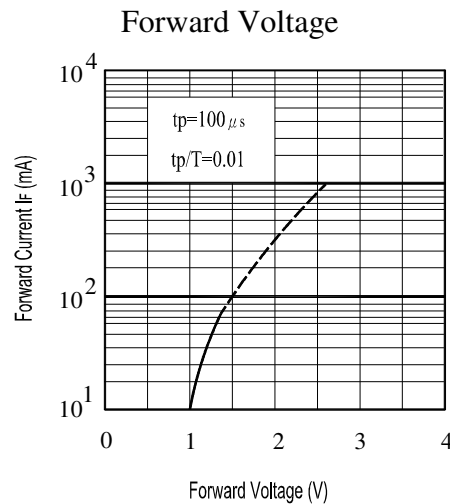


Fig.8 Forward Current vs. Ambient Temperature(°C)

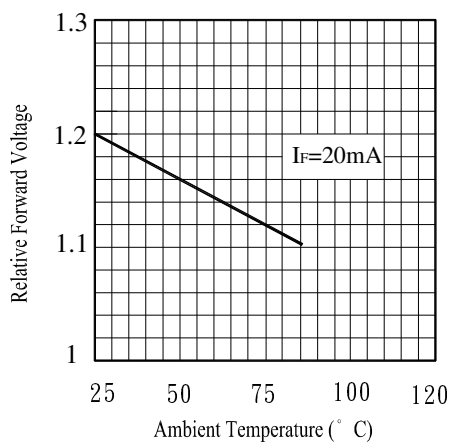
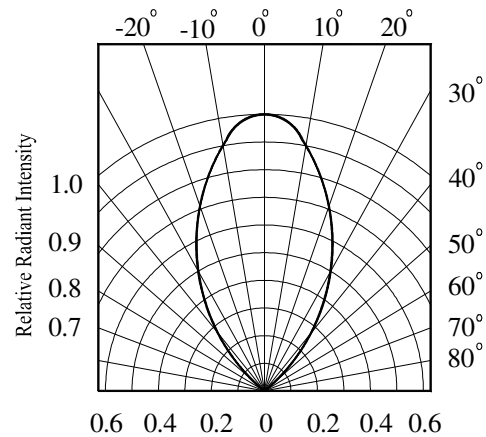


Fig.6 Relative Radiant Intensity vs. Angular Displacement



■ Typical Electrical/Optical/Characteristics Curves for PT

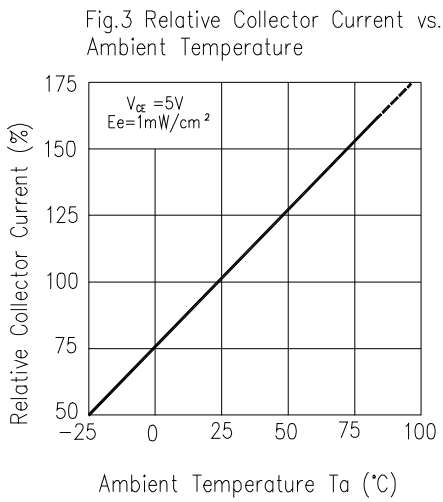
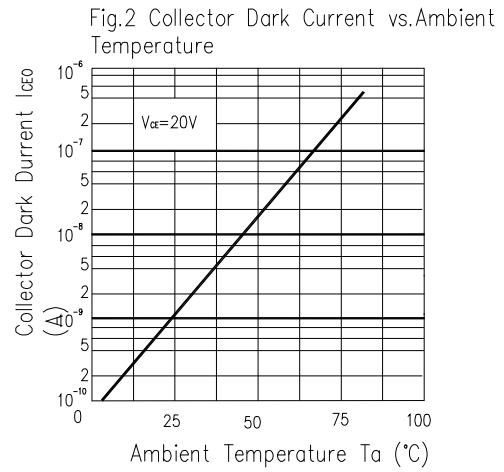
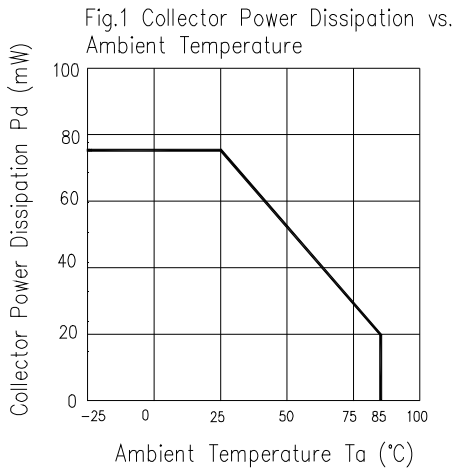


Fig.4 Collector Current vs. Irradiance

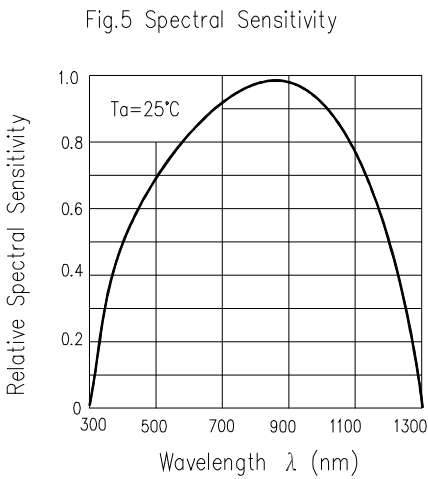
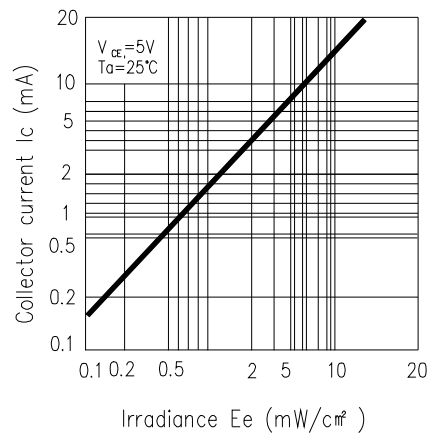
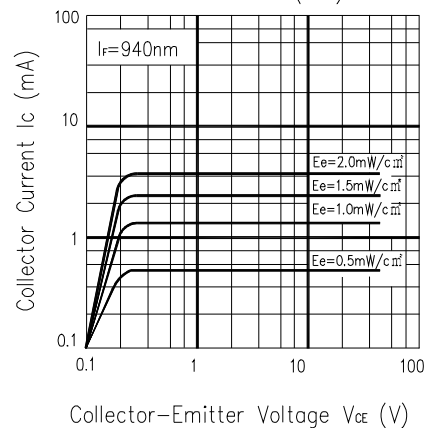


Fig.6 Collector Current vs. Collector Current I_c (mA)



■ Packing Quantity Specification

1. 78Pcs/1Tube,42 Tubes/1Box
2. 4Boxes/1Carton

■ Label Form Specification

CPN:
P/N:
ITR9707

QTY:
LOT NO:
Reference

EVERLIGHT

RoHS

X

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

X: Month

Reference: Identify Label Number

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