

Technical Data Sheet

OPTO INTERRUPTER ITR

ITR9904

■ Features

- Fast response time
- High analytic
- Cut-off visible wavelength $\lambda_p=940\text{nm}$
- High sensitivity
- Sensing distance 2.4mm
- This product itself will remain within RoHS compliant version.



■ Descriptions

The **ITR9904** consists of an infrared emitting diode and an NPN silicon phototransistor, encased oblique angle (45°) on converging optical axis in a black Thermo-plastic housing. The phototransistor receives radiation from the IRED only, and avoids the noise from ambient light.

■ Applications

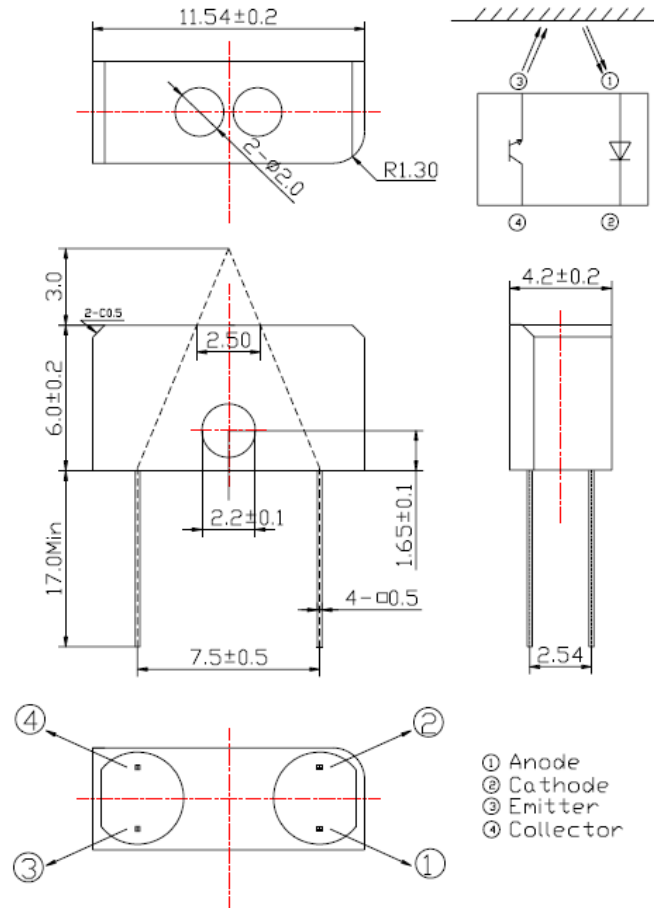
- Copier
- Scanner
- Non-contact Switching
- For Direct PC Board

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Package Dimensions



Notes:

1. All dimensions are in millimeter.
2. General tolerance: ± 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.

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Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Power Dissipation	P _D	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current(*1)	I _{FP}	1.0	A
Output	Collect Power Dissipation	P _C	75	mW
	Collect Current	I _C	20	mA
	Collector-Emitter Voltage	V _{CE}	30	V
	Emitter-Collector Voltage	V _{EC}	5	V
Operating Temperature		T _{opr}	-25~+85	°C
Storage Temperature		T _{stg}	-40~+85	°C
Soldering Temperature(*2)		T _{sol}	260	°C

(*1) Pause width= 100μs, Duty Cycle=1%

(*2) t=5 secs

Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V _{F1}	-	1.2	1.5	V	I _F =20mA
		V _{F2}	-	1.4	1.85		I _F =100mA
		V _{F3}	-	2.6	4.0		I _F =1A
	Reverse Current	I _R	-	-	10	μA	V _R =5V
	Peak Wavelength	λ _P	-	940	-	nm	---
	View Angle	2θ1/2	-	35	-	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 _F =20mA, I _C =1mA
Collect Current		I _{C(ON)A}	100	-	300	μA	V _{CE} =5V, I _F =20mA
		I _{C(ON)B}	200	-	600		
		I _{C(ON)C}	400	-	1200		
Response Time	Rise Time	t _R	-	15	-	μs	V _{CE} =2V, I _C =1mA, R _L =1KΩ
	Fall Time	t _F	-	15	-	μs	

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Typical Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

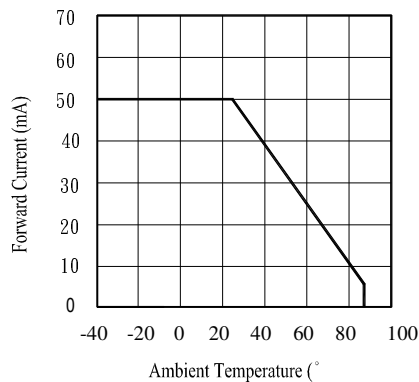


Fig. 2 Spectral Distribution

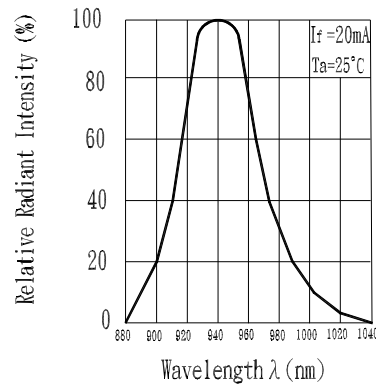


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

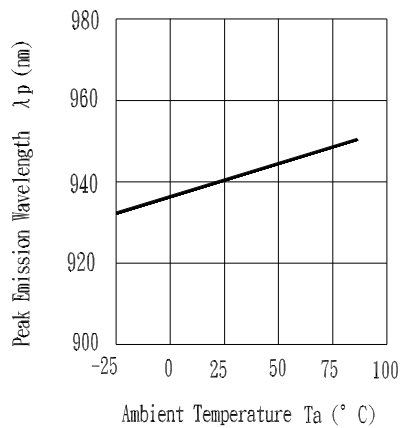


Fig. 4 Forward Current vs. Forward Voltage

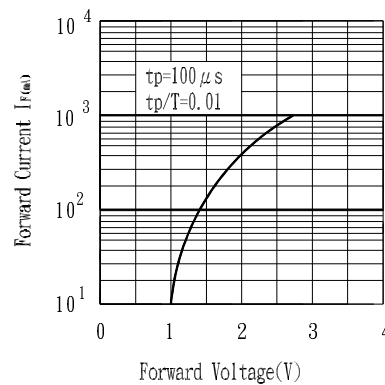


Fig. 5 Relative Intensity vs. Forward Current

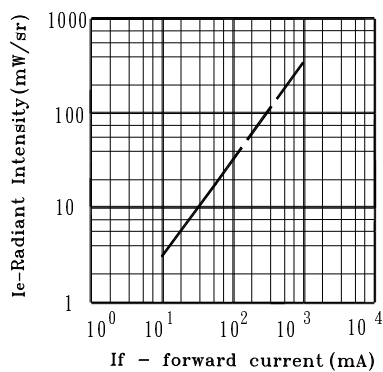
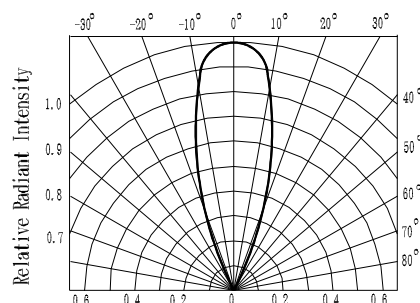


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



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Typical Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

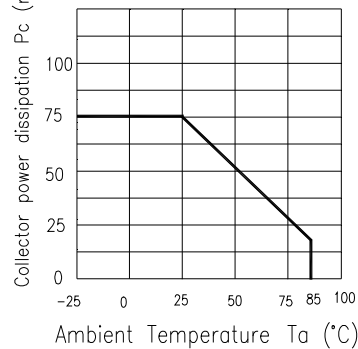


Fig.2 Collector Dark Current vs. Ambient Temperature

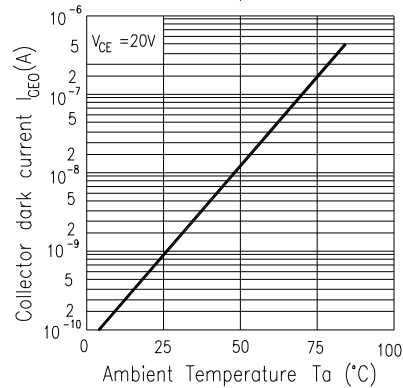


Fig. 3 Relative Collector Current vs. Ambient Temperature

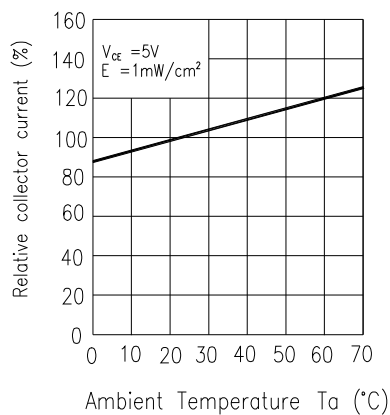


Fig.4 Collector Current vs. Irradiance

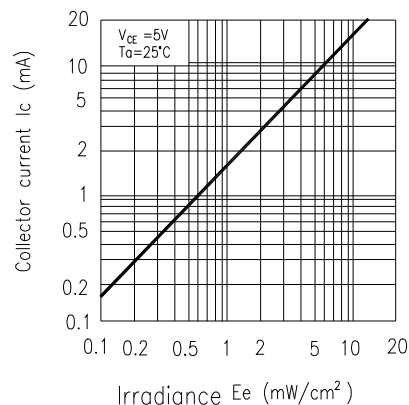


Fig.5 Spectral Sensitivity

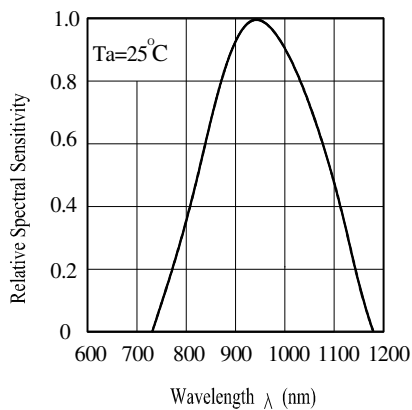
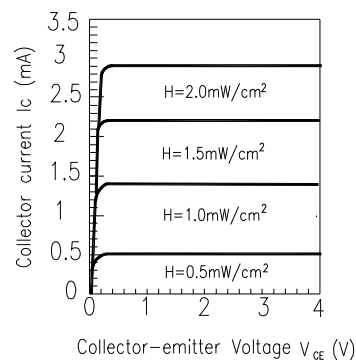


Fig.6 Collector Current vs. Collector-emitter Voltage



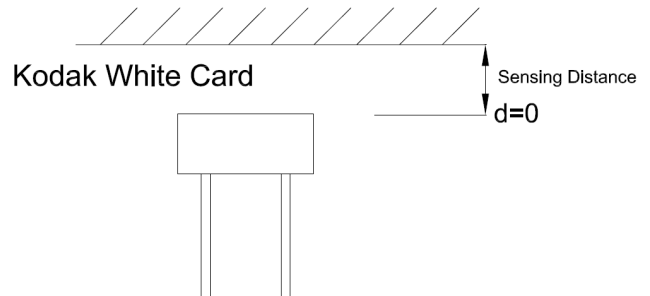
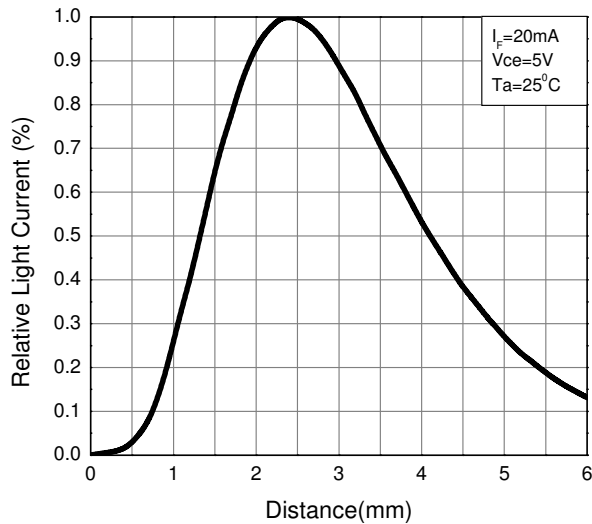
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Typical Characteristics Curves for Interrupter

Fig.1 Relative Light Current vs Distance(mm) * *Testing method



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ITR9904

■ Packing Quantity Specification

150 pcs/1bag , 5 bags/1box , 10 boxes/1carton

■ Label Form Specification

EVERLIGHT

CPN:

P/N:



ITR9904

QTY:



CAT:

HUE:

REF:

LOT NO:



CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

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