

EVERLIGHT**DATASHEET**

Opto Interrupter ITR9909

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

Description

- The ITR9909 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 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 IR and PT

Applications

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

Device Selection Guide

Device No.	Chip Materials	Lens Color
IR	GaAlAs	Blue
PT	Silicon	Black

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

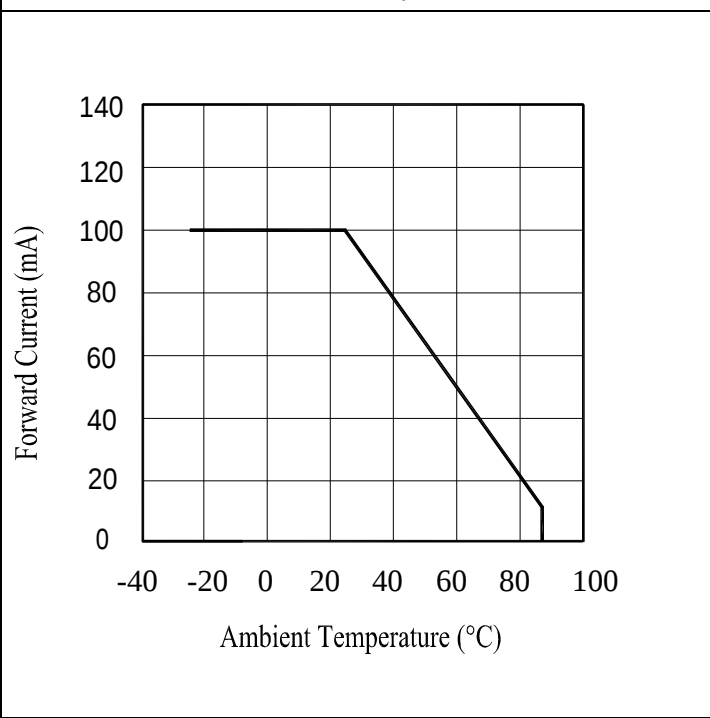
(*1) $t_w=100 \mu\text{sec.}$, $T=10 \text{ msec.}$ (*2) $t=5 \text{ Sec}$

Electro-Optical Characteristics (Ta=25 °C)

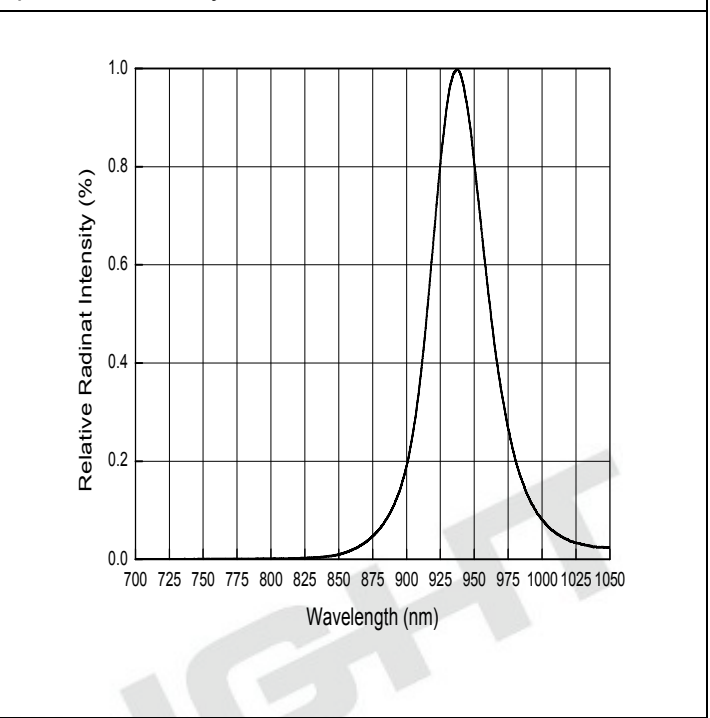
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	VF	---	1.2	1.5	V	IF=20mA
			---	1.4	1.85		IF=100mA, tp=100 μs, tp/T=0.01
			---	2.6	4.0		IF=1A, tp=100 μs, tp/T=0.01
	Reverse Current	IR	---	---	10	μA	VR=5V
	Peak Wavelength	λP	---	940	---	nm	IF=20mA
Output	Dark Current	ICEO	---	---	100	nA	VCE=20V, Ee=0mW/cm ²
	C-E Saturation Voltage	VCE(sat)	---	---	0.4	V	IC=2mA Ee=1mW/cm ²
Transfer Characteristics	Collect Current	IC(ON)	200	---	---	μA	VCE=5V IF=20mA
	Rise time	tr	---	15	---	μsec	VCE=5V, IC=1mA ,RL=1000Ω
	Fall time	tf	---	15	---	μsec	

Typical Electrical/Optical/Characteristics Curves for IR

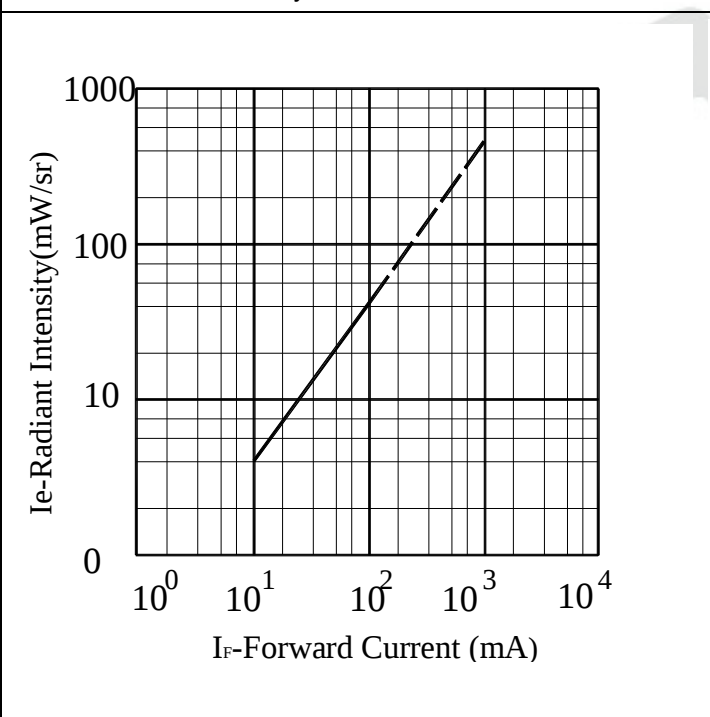
Forward Current vs. Ambient Temperature



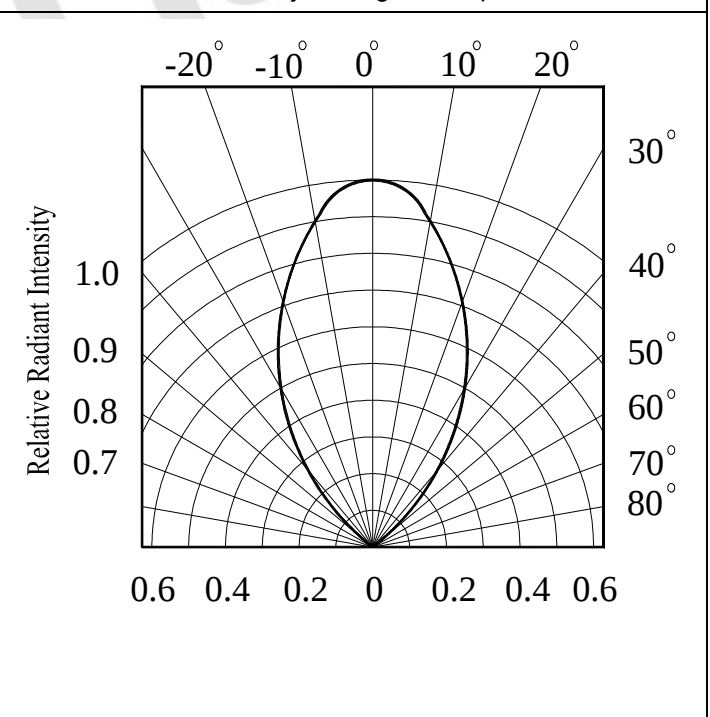
Spectral Sensitivity



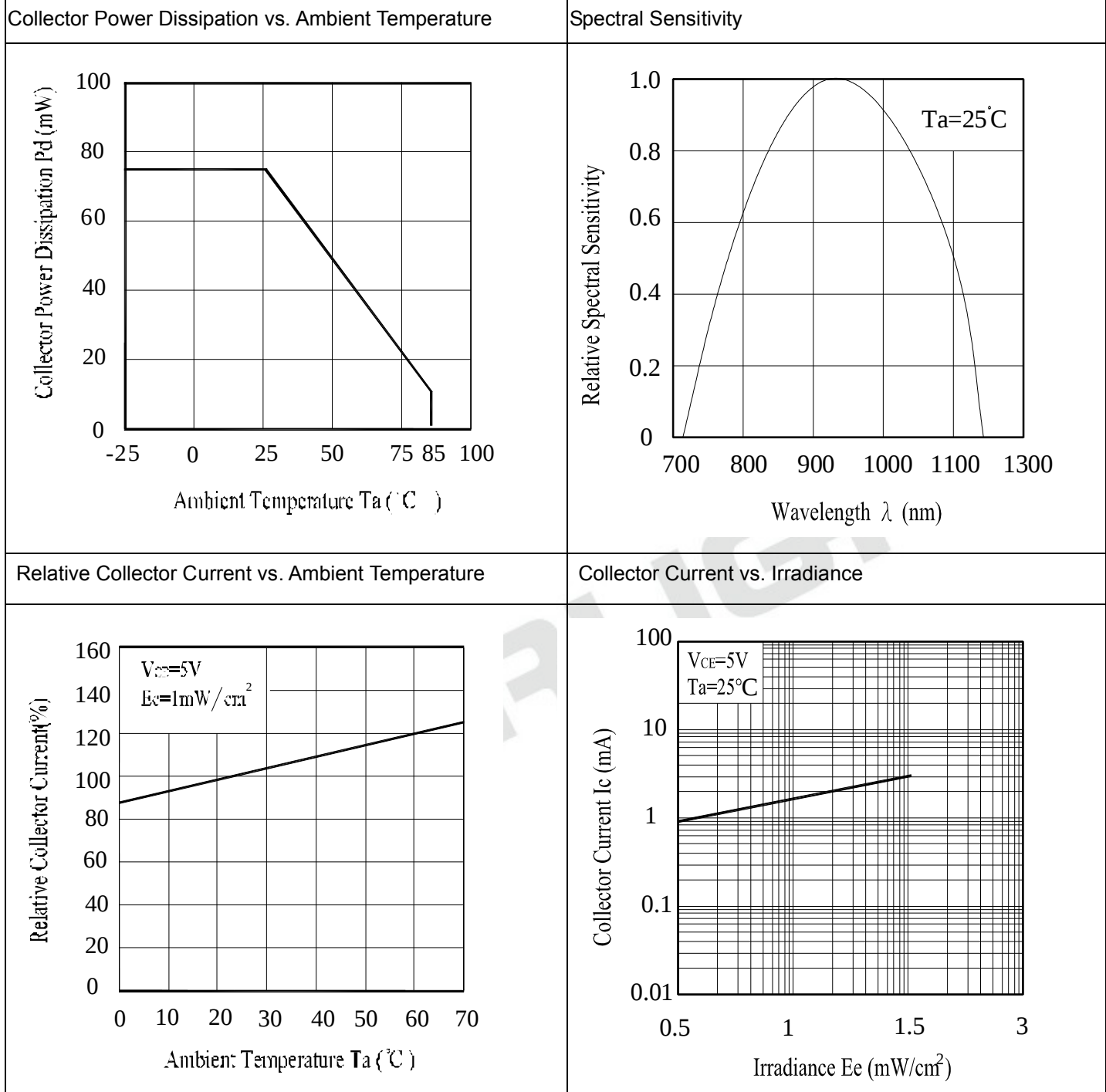
Relative Radiant Intensity vs Forward Current



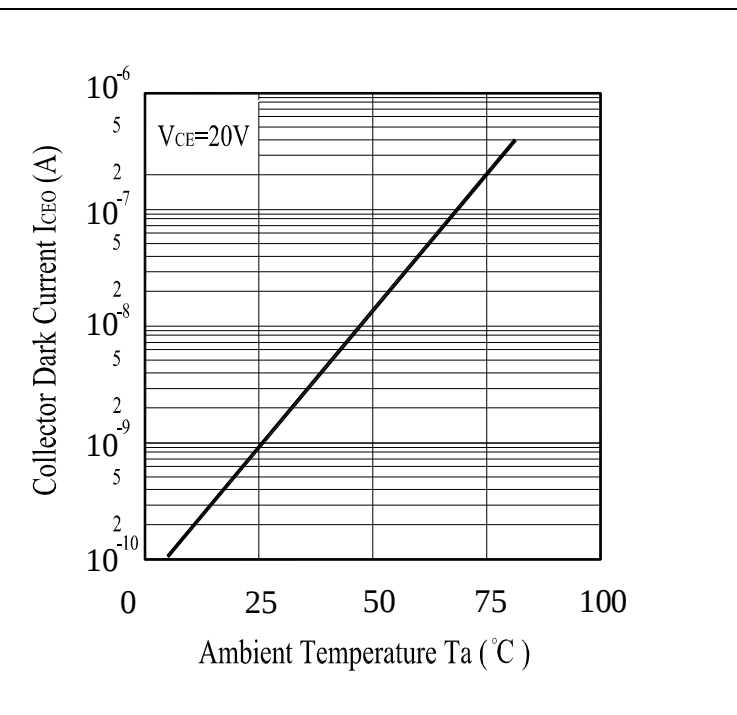
Relative Radiant Intensity vs Angular Displacement



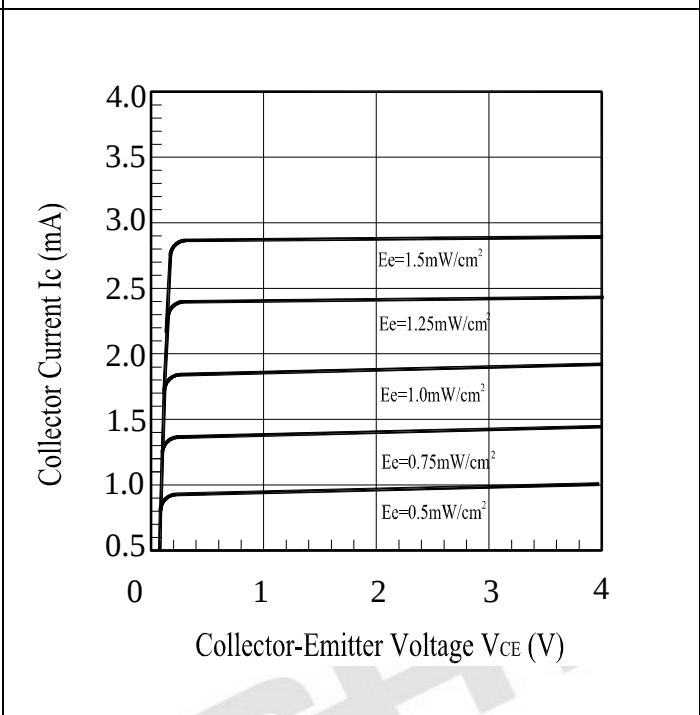
Typical Electrical/Optical/Characteristics Curves for PT



Collector Dark Current vs. Ambient Temperature

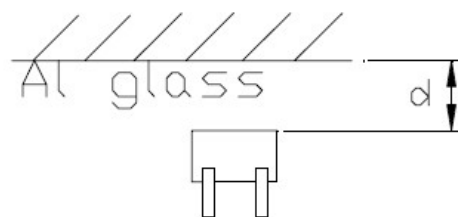
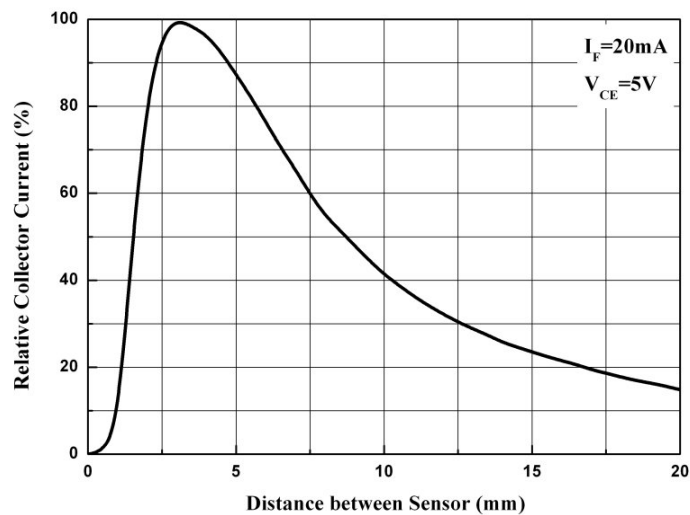


Collector Current vs. Collector-Emitter Voltage

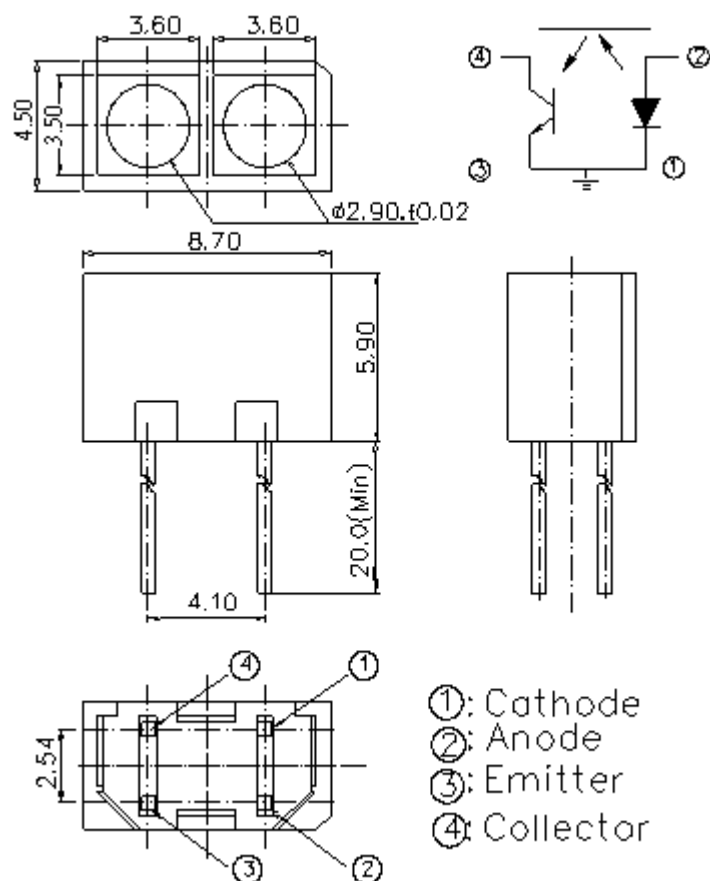


Typical Electrical/Optical/Characteristics Curves for ITR

Relative Collector Current vs Distance Between Sensor



Package Dimension



Note: Tolerances unless dimensions ± 0.25 mm

Packing Quantity Specification

1. 150PCS/1 Bag, 5 Bags/1Box
2. 10Boxes/1Carton

Label Form Specification

CPN:
P/N:
QTY:
LOT NO:
Reference

EVERLIGHT

RoHS

CAT:
HUE:
REF:

- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number
- X: Month
- Reference: Identify Label Number

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 instruction 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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