DATASHEET

ITR9904

Features

- Fast response time
- High analytic
- Cut-off visible wavelength λp=940nm
- High sensitivity
- This product itself will remain within RoHS compliant version.

Description

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

Device Selection Guide

Device No.	Chip Material
IR	GaAlAs
PT	Silicon

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	PD	75	mW
	Reverse Voltage	VR	5	V
	Forward Current	IF	50	mA
	Peak Forward Current (*1)	IFP	1.0	A
Output	Collector Power Dissipation	Pc	75	mW
	Collector Current	Ic	20	mA
	Collector-Emitter Voltage	VCE	30	V
	Emitter-Collector Voltage	VEC	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+85	℃
Lead Soldering Temperature (*2)		Tsol	260	℃

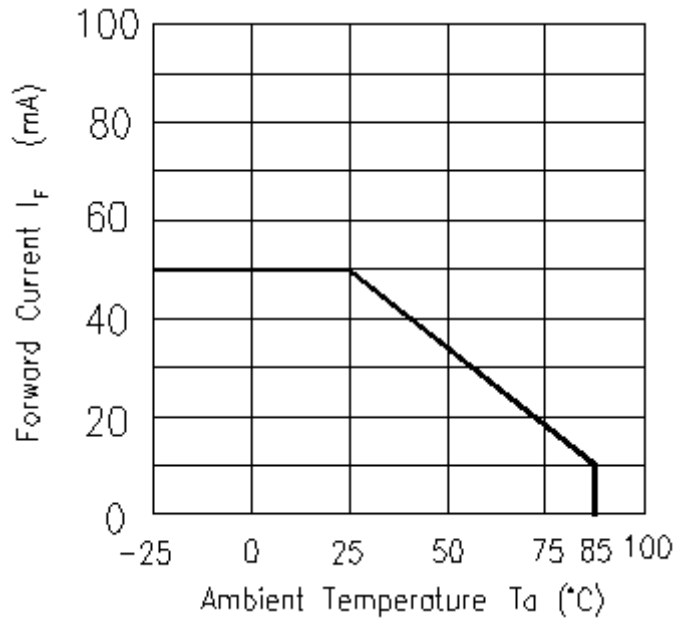
Notes: (*1) Pause width= 100 μs, Duty Cycle=1% (*2) t=5 secs

Electro-Optical Characteristics (Ta=25℃)

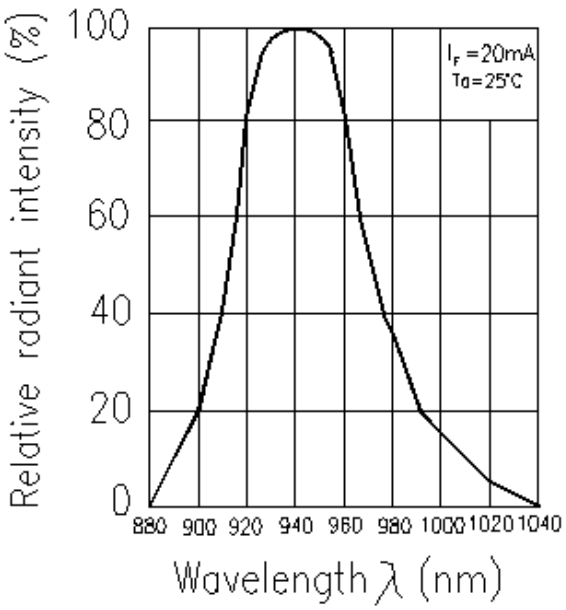
Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V_{F1}	-	1.2	1.5	V	I_F=20mA
		V_{F2}	-	1.4	1.85		I_F=100mA
		V_{F3}	-	2.6	4.0		I_F=1A
	Reverse Current	I_R	-	-	10	μA	V_R=5V
	Peak Wavelength	λ_P	-	940	-	nm	---
	View Angle	2θ1/2	-	35	-	Deg	I_F=20mA
Output	Dark Current	I_{CEO}	-	-	100	nA	V_{CE}=20V,Ee=0mW/cm^2
	C-E Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	I_C=2mA,I_B=0.1mA
Collect Current		IC(ON)A	**100**	-	**300**	μA	V_{CE}=5V,I_F=20mA
		IC(ON)B	**200**	-	**600**		
		IC(ON)C	**400**	-	**1200**		
Response Time	Rise Time	t_R	-	15	-	μs	V_{CE}=2V,I_C=1mA,R_L=1 KΩ
	Fall Time	t_F	-	15	-	μs	

Typical Electrical/Optical/Characteristics Curves for IR

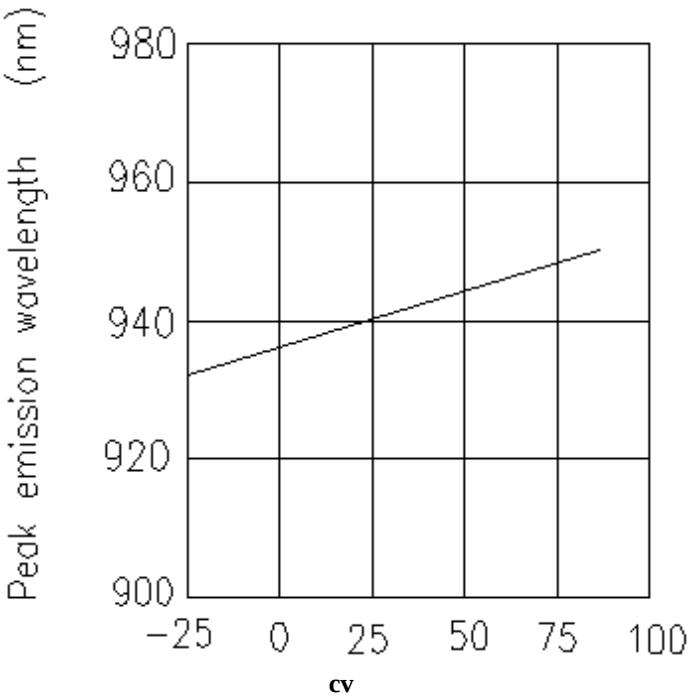
Forward Current vs. Ambient Temperature



Spectral Distribution

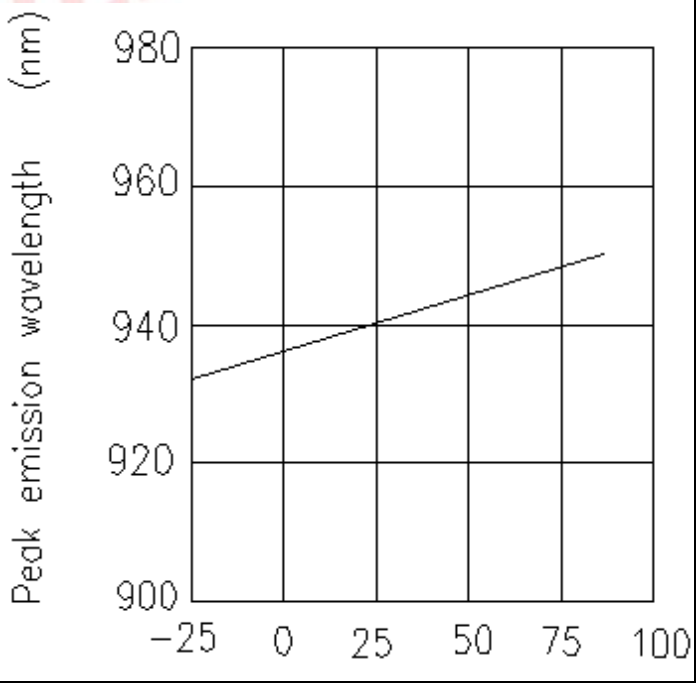


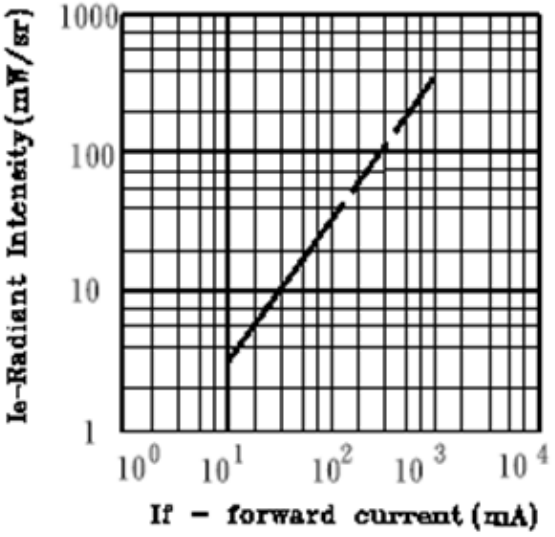
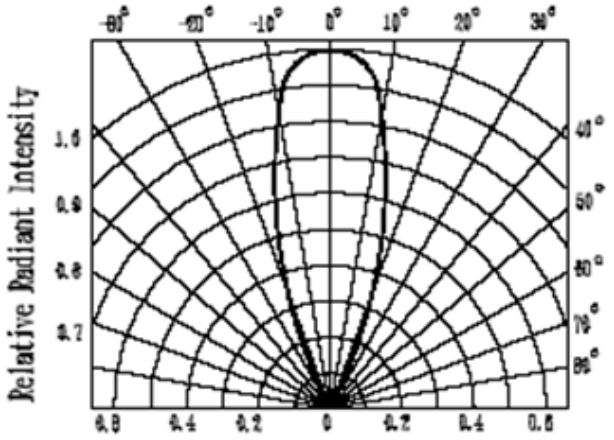
Peak Emission Wavelenght vs. Ambient Temperature



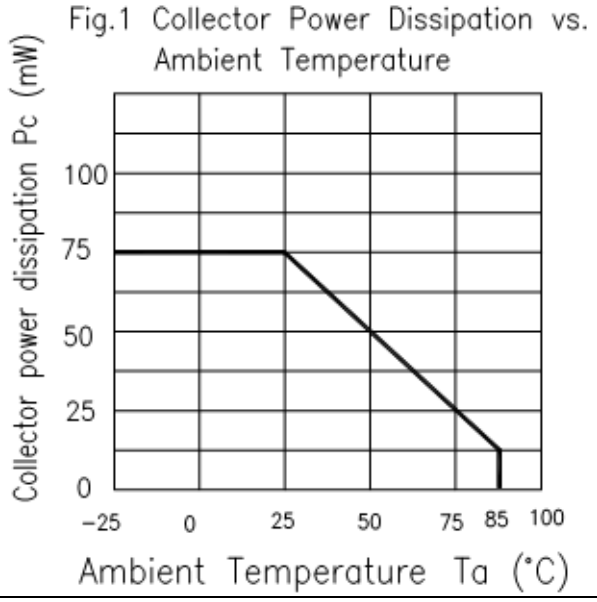
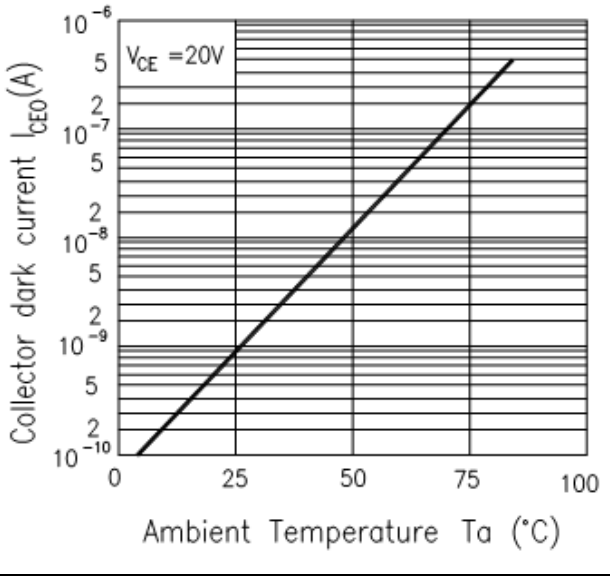
cv

Forward Current vs. Forward Voltage

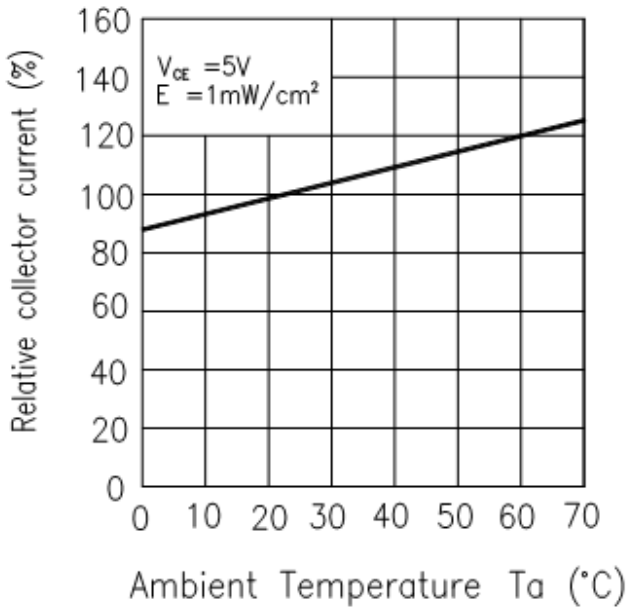


Forward Current vs. Ambient Temperature	Relative Radiant Intensity vs. Angular Displacement
	

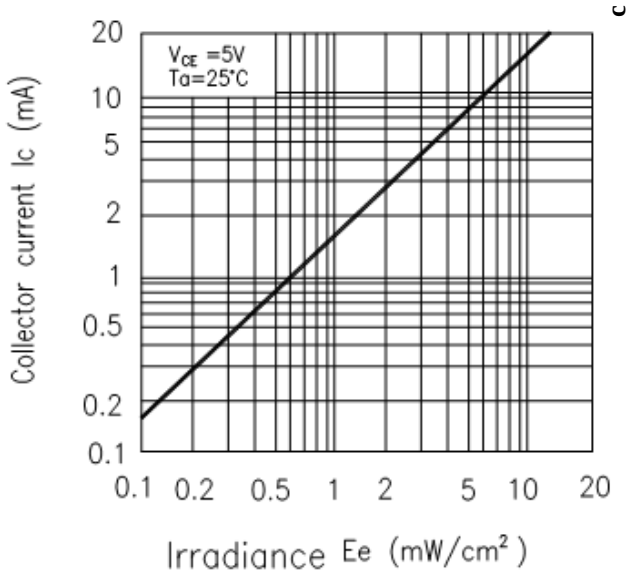
Typical Electro/Optical/Characteristics Curves for PT

Collector Power Dissipation vs. Ambient Temperature	Collector Dark Current vs. Ambient Temperature
	

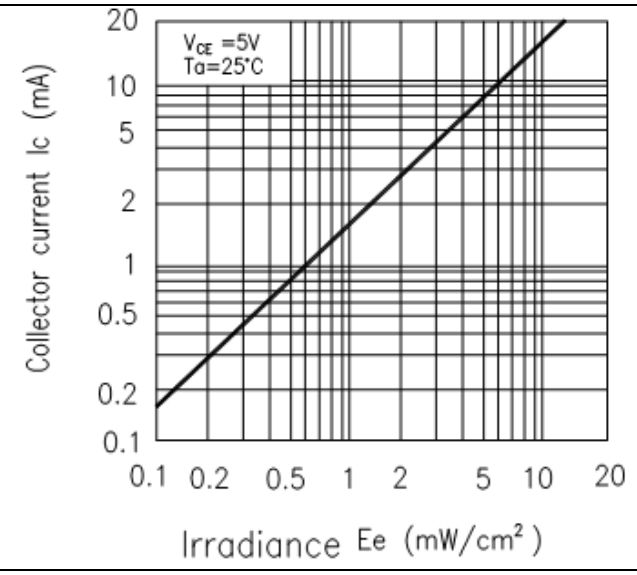
Relative Collector Current vs Ambient Temperature



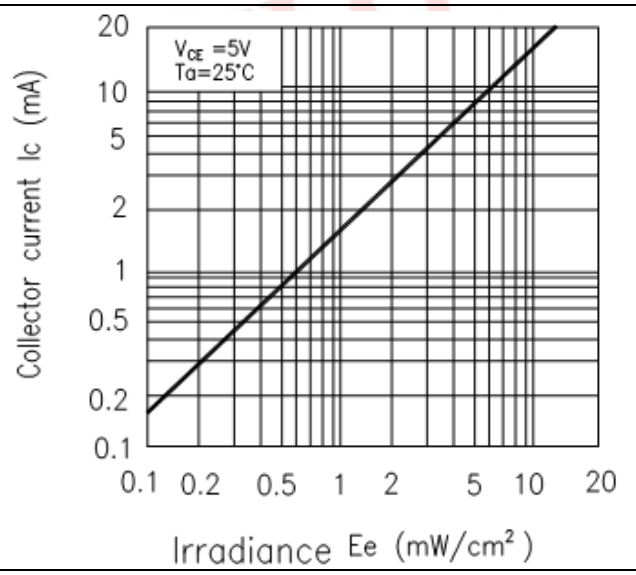
Collector Current vs. Irradiance



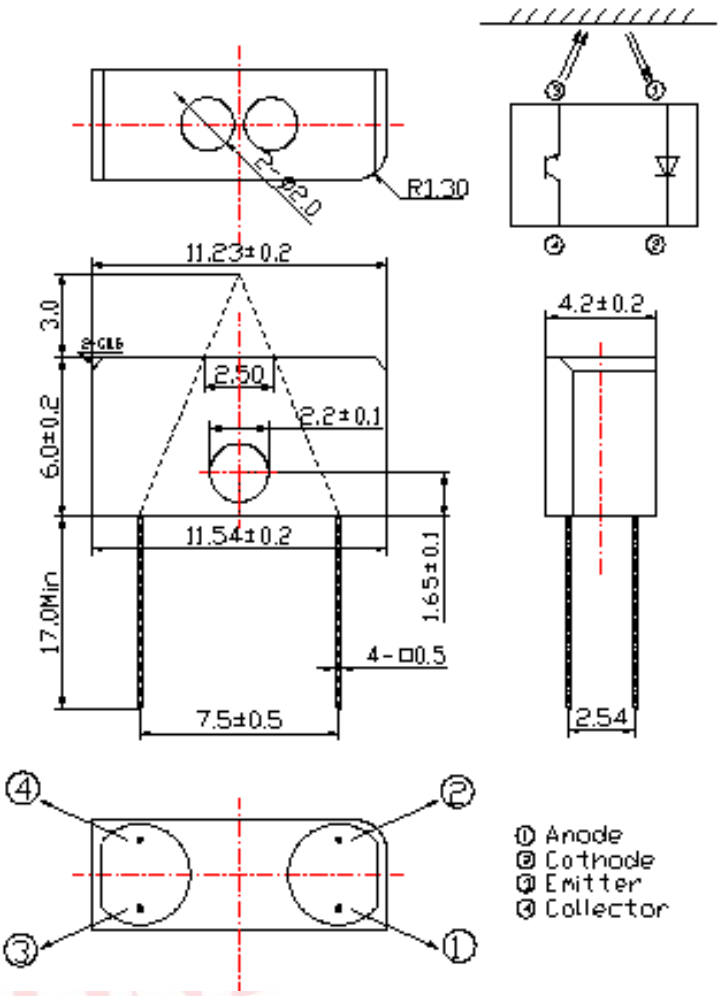
Spectral Sensitivity



Collector Current vs. Collector-emitter Voltage



Package Dimension

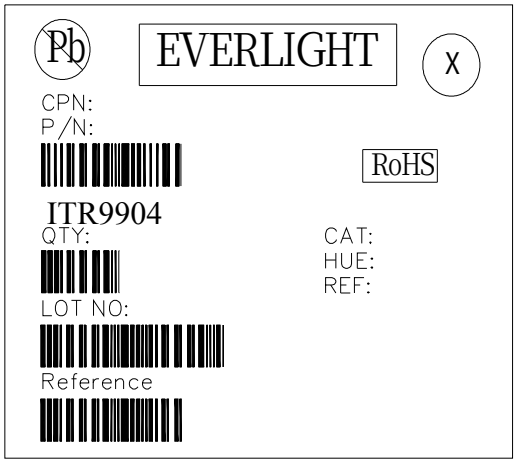


Notes:

1. All dimensions are in millimeter.
2. General tolerance: ±0.2mm
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 copy right 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 noonsibility 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.

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

Label Form Specification



- 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 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.