DATASHEET

ITR8010

Features

- Wide gap between light emitter and detector (2.1mm)
- Fast response time
- High sensitivity
- Pb free

Description

The **ITR8010** 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 receive the radiation.

Applications

- Mouse Copier
- Printer
- Facsimile
- Ticket vending machine
- Opto-electronic switch

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LifecyclePhase: Approved Expired Period: Forever

Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR	GaAlAs	Water Clear
PT	Silicon	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ 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	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+85	℃
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	℃

(＊1) tw=100 μsec. , T=10 msec. (＊2) t=5 Sec

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Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	---	1.2	1.6	V	I_F=20mA
	Reverse Current	I_R	---	---	10	μ A	V_R=5V
	Peak Wavelength	λ_P	---	940	---	nm	I_F=20mA
	View Angle	2θ1/2	---	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)	0.5	---	---	mA	V_{CE}=5V I_F=20mA
	Rise time	t_r	---	20	---	μ sec	V_{CE}=5V I_C=1mA R_L=1KΩ
	Fall time	t_f	---	20	---	μ sec	

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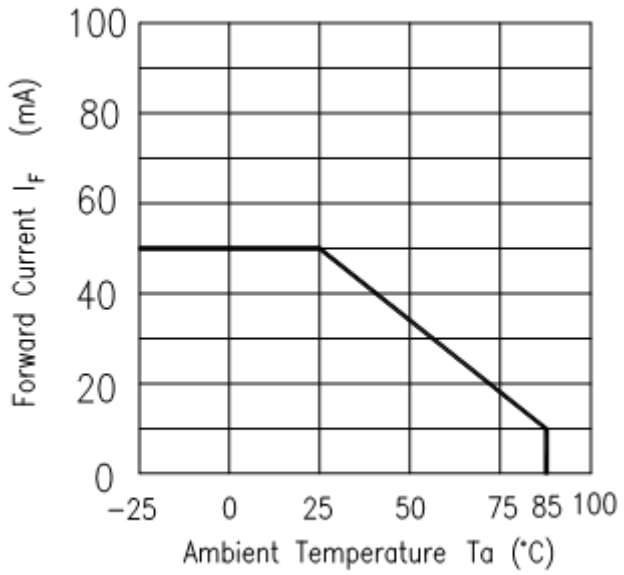
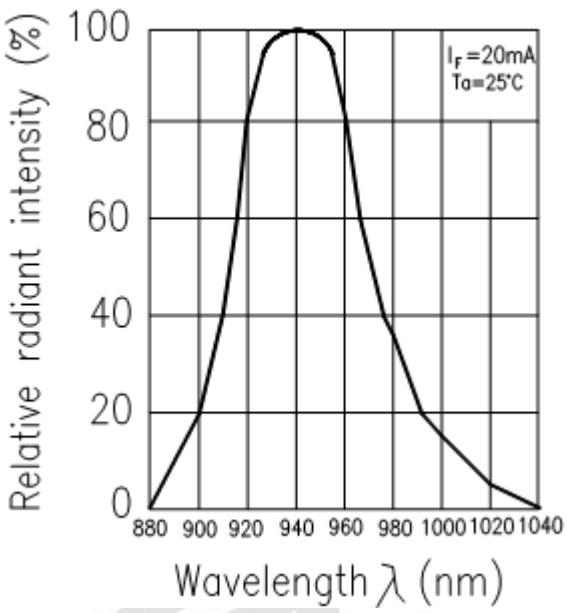
Typical Electrical/Optical/Characteristics Curves for IR

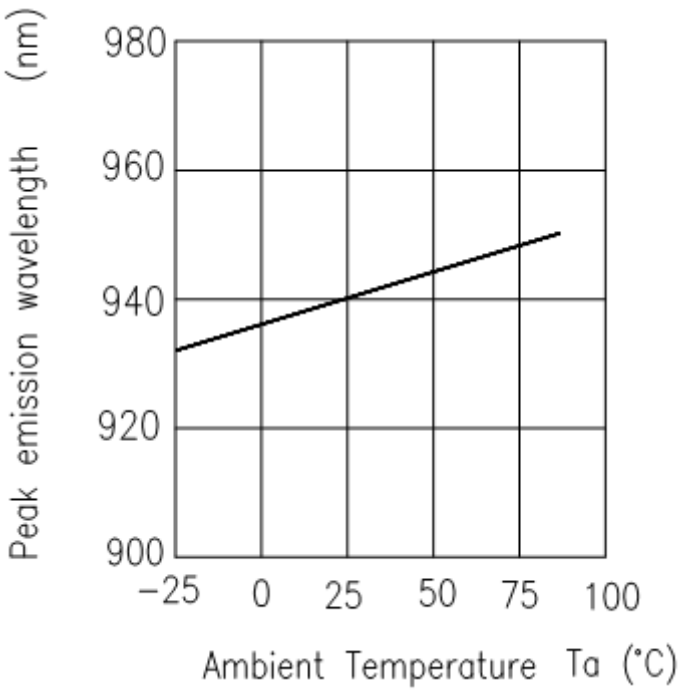
Forward Current vs. Ambient Temperature



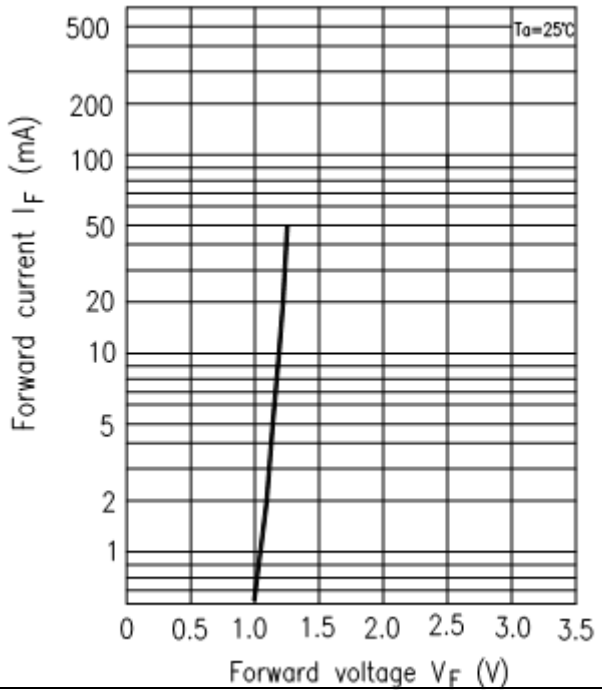
Spectral Distribution



Peak Emission Wavelenght vs. Ambient Temperature



Forward Current vs. Forward Voltage



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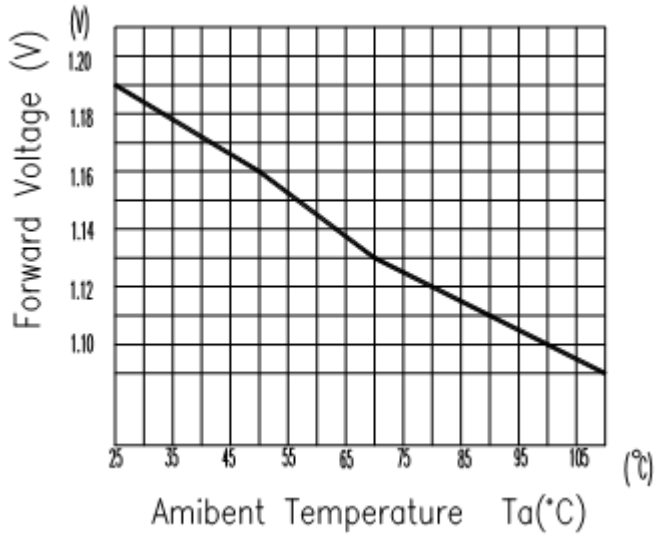
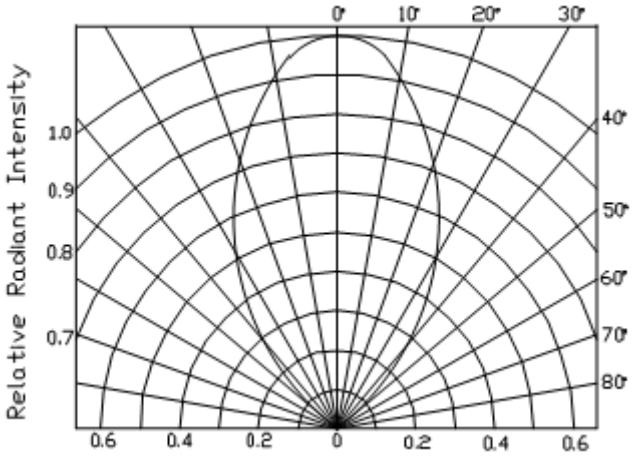
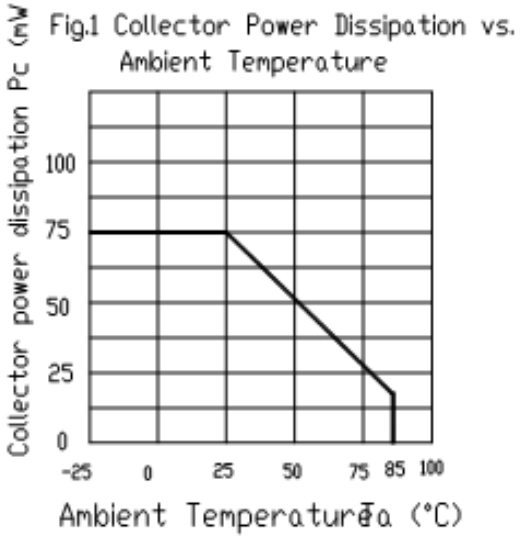
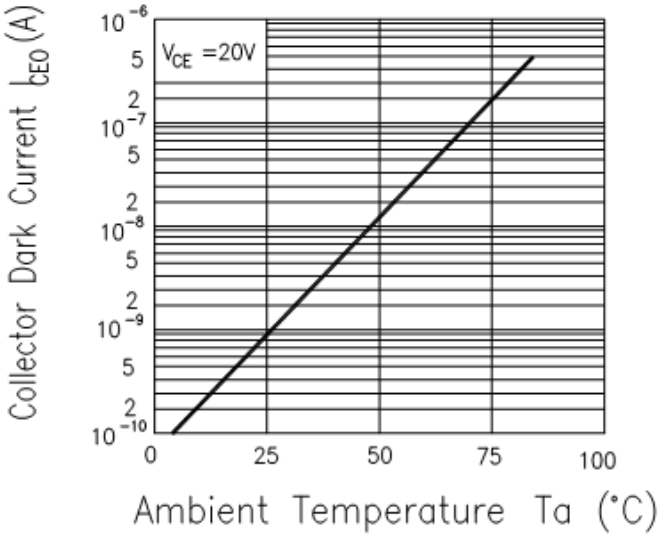
Forward Current vs. Ambient Temperature	Relative Radiant Intensity vs. Angular Displacement
	

Typical Electro/Optical/Characteristics Curves for PT

Collector Power Dissipation vs. Ambient Temperature	Spectral Sensitivity
	

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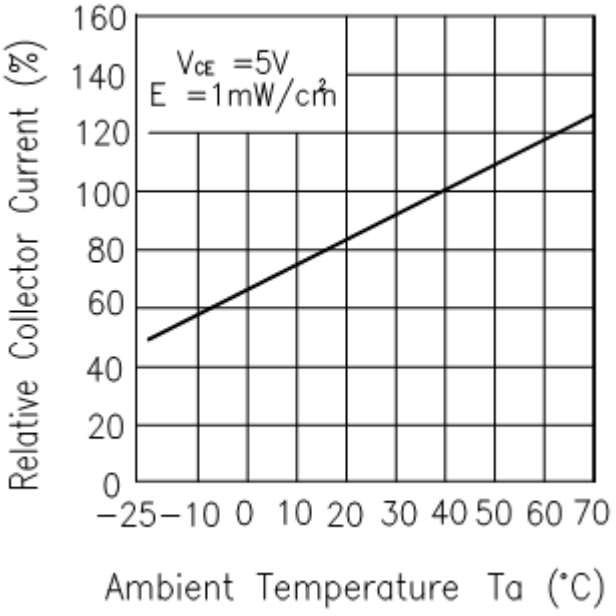
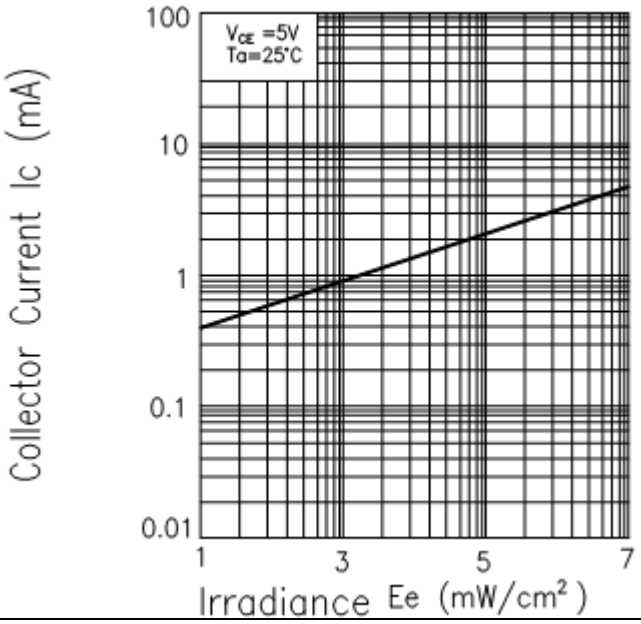
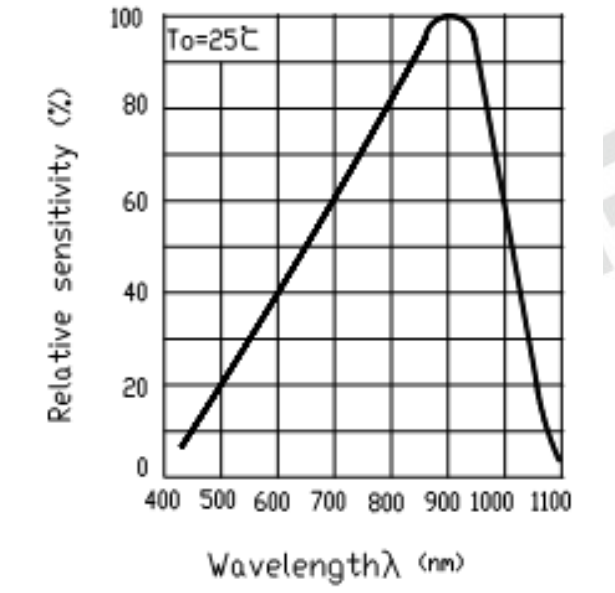
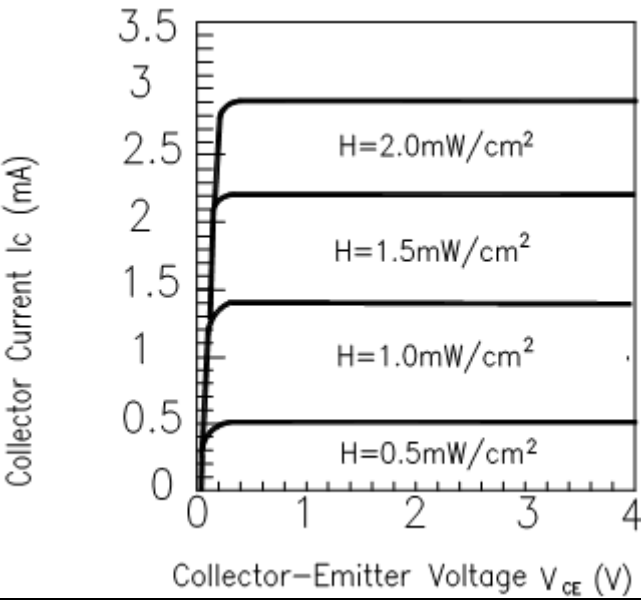
Relative Collector Current vs Ambient Temperature	Collector Current vs. Irradiance
	

Spectral Sensitivity	Collector Current vs. Collector-emitter Voltage
	

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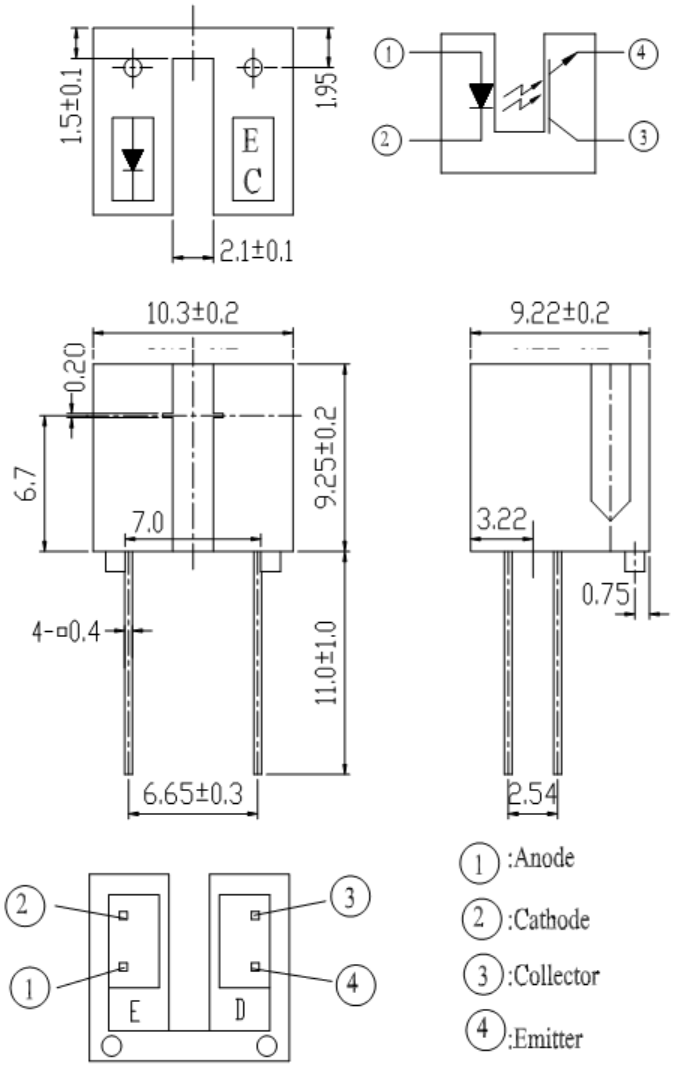
Package Dimension



Notes:

1.All dimensions are in millimeters

2.Tolerances unless dimensions ±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

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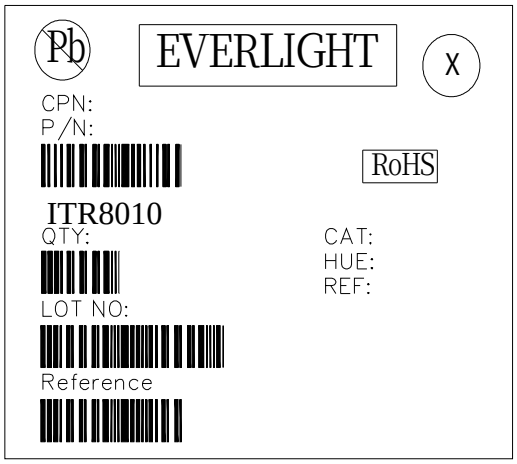
Packing Quantity Specification
1. 150pcs/1Bag, 4Bags/1Box
2. 10Boxes/1Carton

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

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