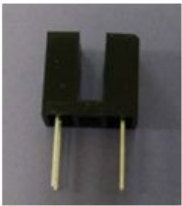


## ITR8105



### Features

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

### Description

The **ITR8105** 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
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

**Device Selection Guide**

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

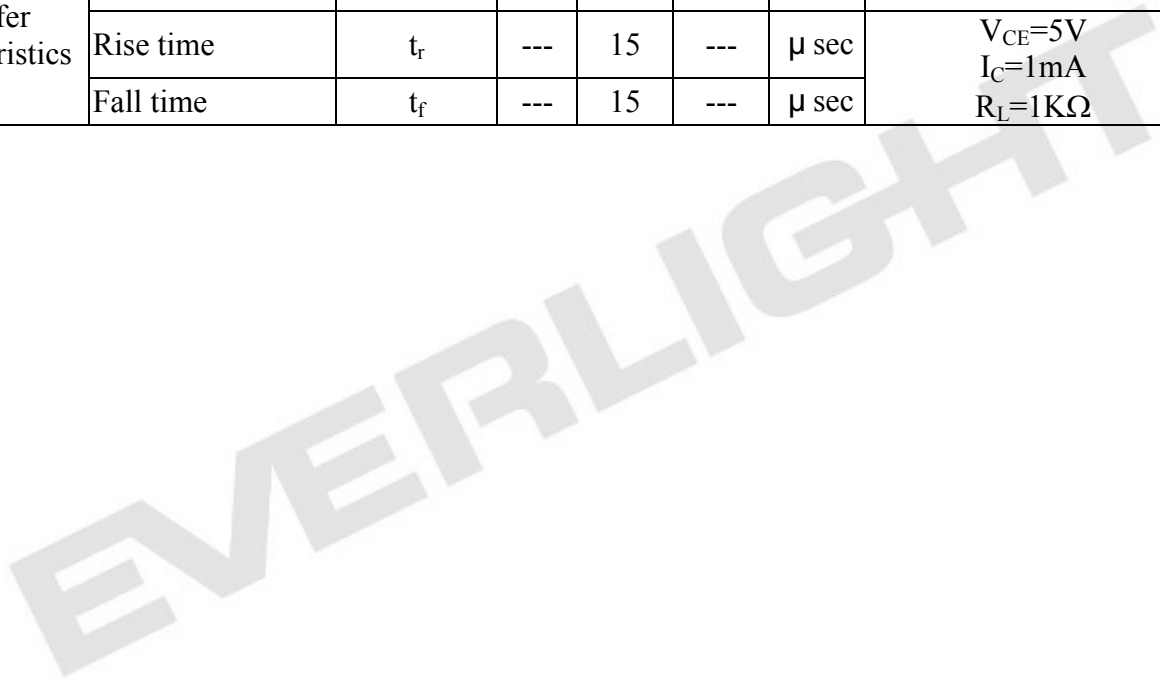
**Absolute Maximum Ratings (Ta=25 °C)**

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25 °C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	50	mA
	Peak Forward Current (*1) Pulse width 100 μs, Duty cycle=1%	I <sub>FP</sub>	1	A
Output	Collector Power Dissipation	P <sub>C</sub>	75	mW
	Collector Current	I <sub>C</sub>	20	mA
	Collector-Emitter Voltage	B V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	B V <sub>ECO</sub>	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	

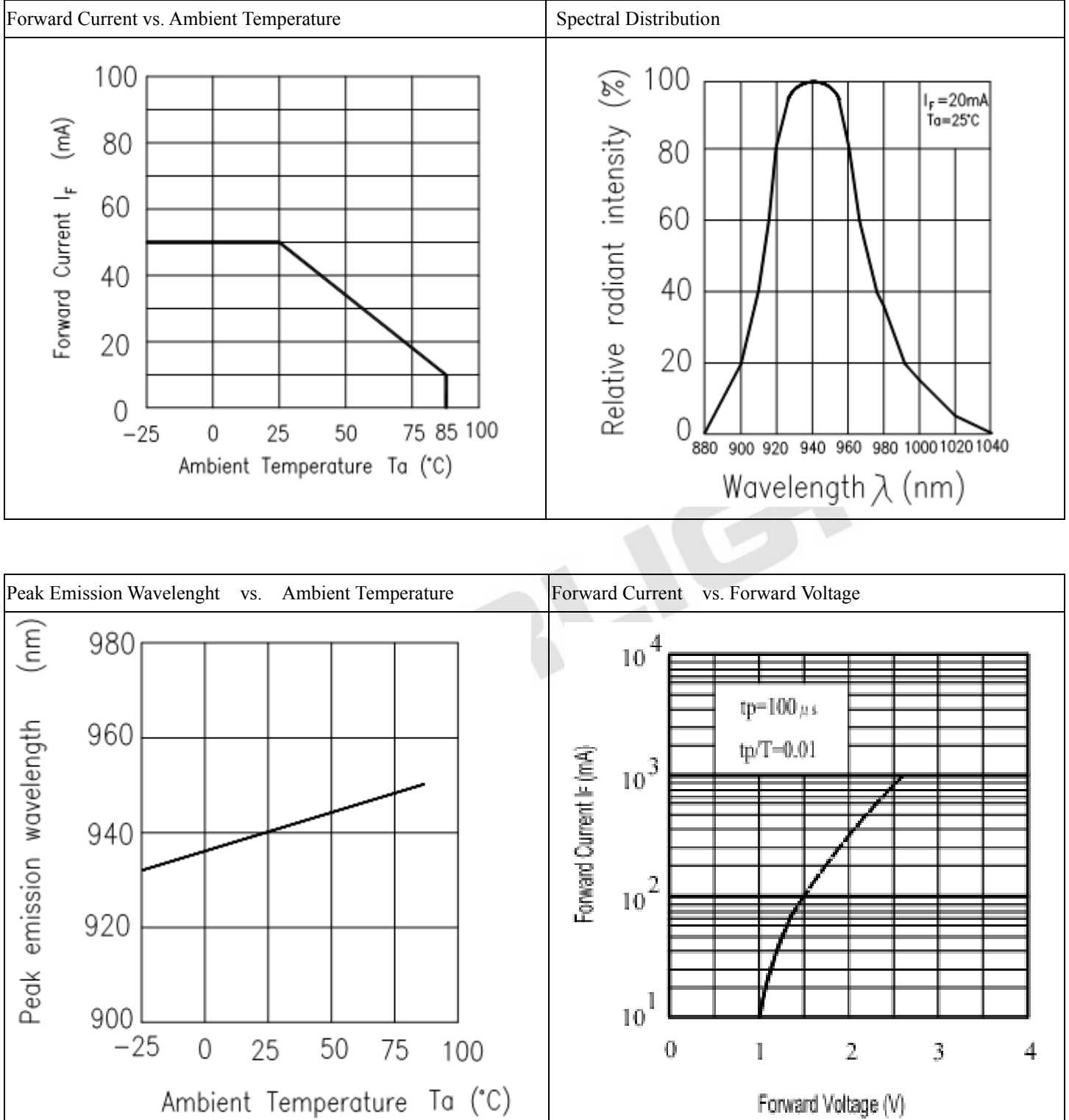
(\* 1)  $t_w=100 \mu \text{ sec.}$ ,  $T=10 \text{ msec.}$  (\* 2)  $t=5 \text{ Sec}$

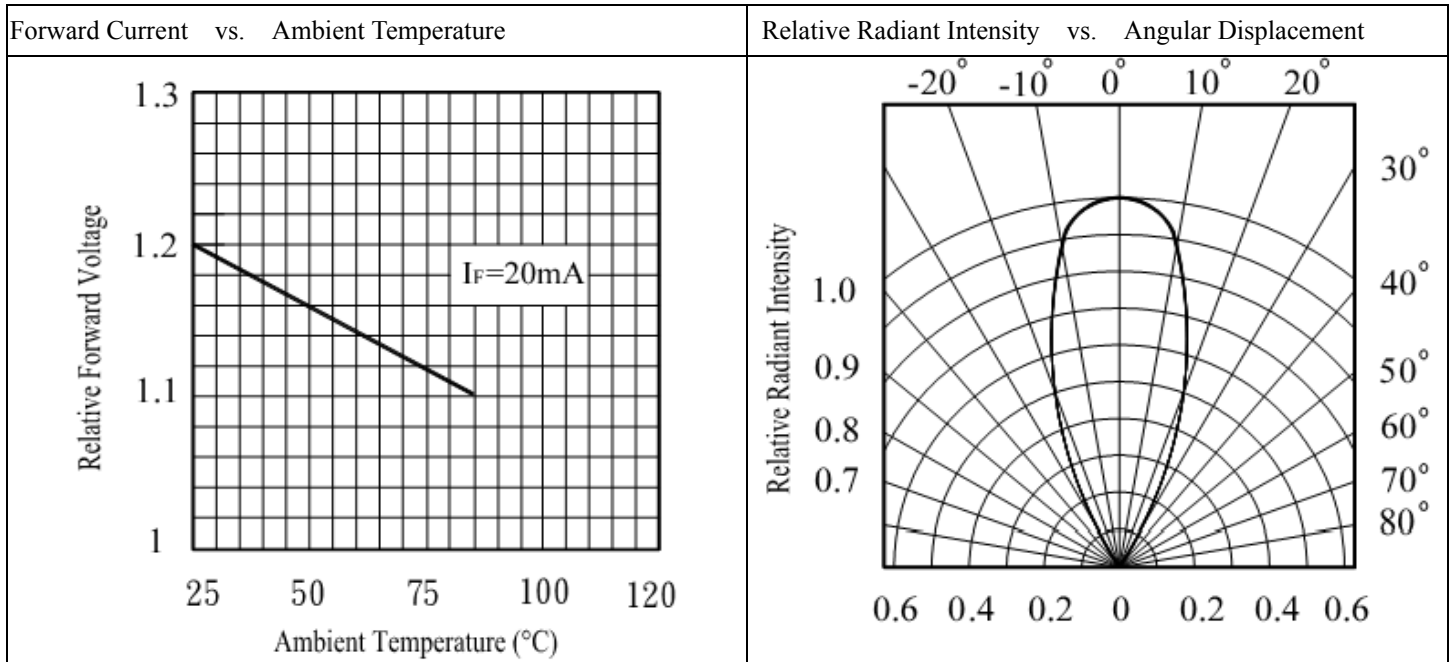
Electro-Optical Characteristics (Ta=25 °C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	$V_F$	---	1.2	1.6	V	$I_F=20\text{mA}$
	Reverse Current	$I_R$	---	---	10	$\mu\text{A}$	$V_R=5\text{V}$
	Peak Wavelength	$\lambda_p$	---	940	---	nm	$I_F=20\text{mA}$
	View Angle	2 $\theta$ 1/2	---	40	---	Deg	$I_F=20\text{mA}$
Output	Dark Current	$I_{CEO}$	---	---	100	nA	$V_{CE}=20\text{V}, E_e=0\text{mW/cm}^2$
	C-E Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	$I_C=2\text{mA}$ $E_e=1\text{mW/cm}^2$
Transfer Characteristics	Collect Current	$I_C(ON)$	0.9	---	15	mA	$V_{CE}=5\text{V } I_F=20\text{mA}$
	Rise time	$t_r$	---	15	---	$\mu\text{sec}$	$V_{CE}=5\text{V}$ $I_C=1\text{mA}$
	Fall time	$t_f$	---	15	---	$\mu\text{sec}$	$R_L=1\text{K}\Omega$

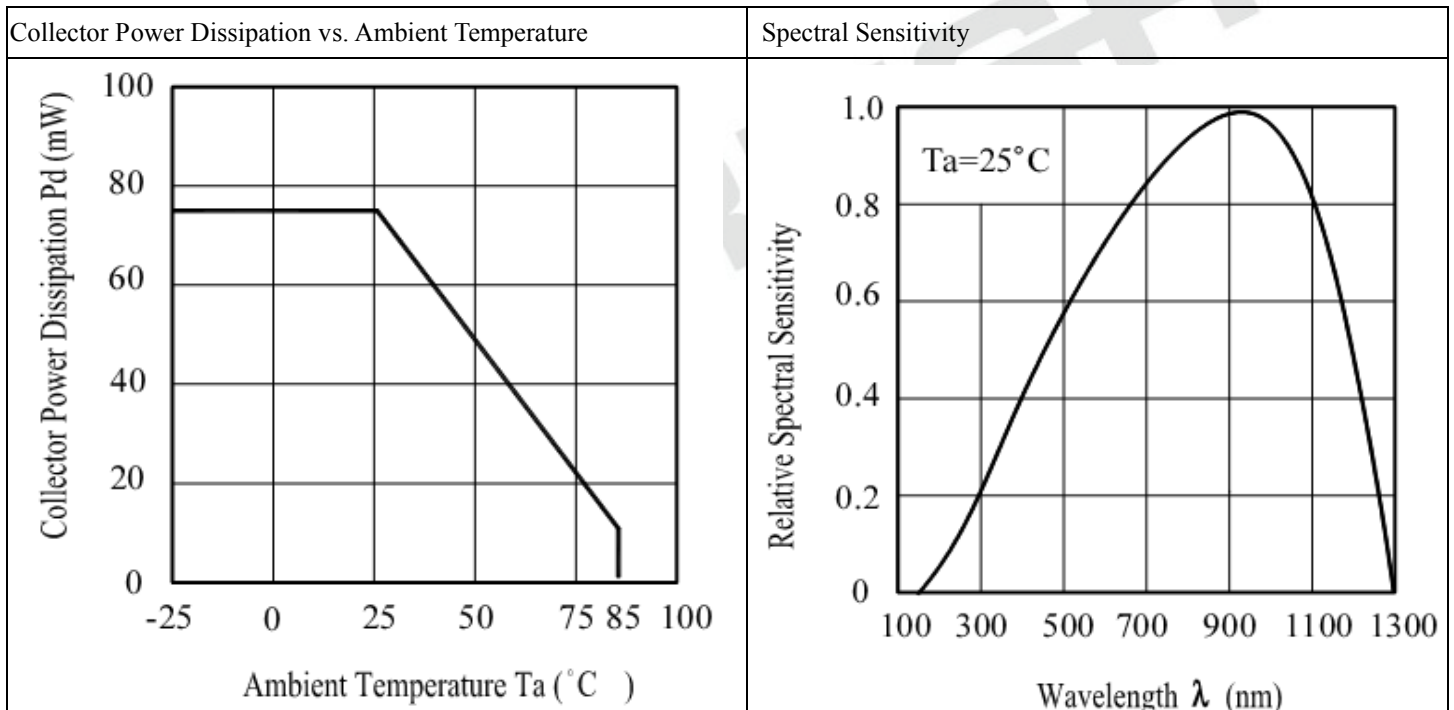


Typical Electrical/Optical/Characteristics Curves for IR

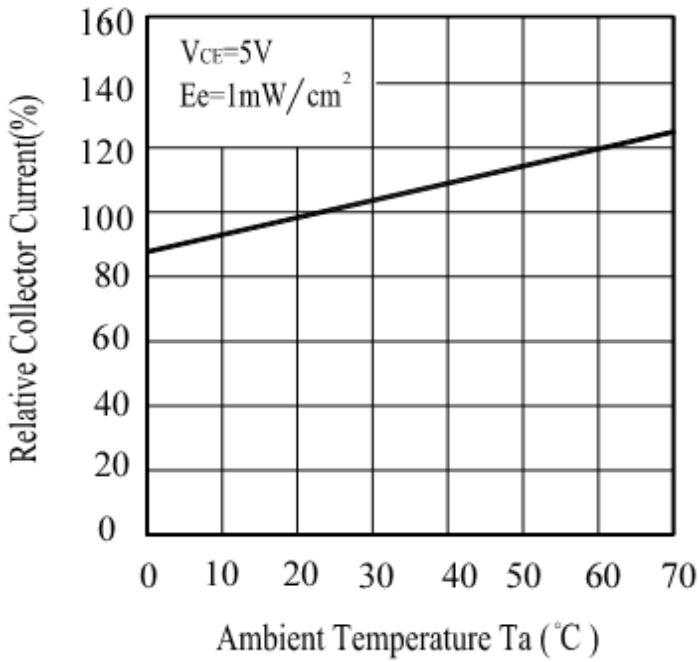




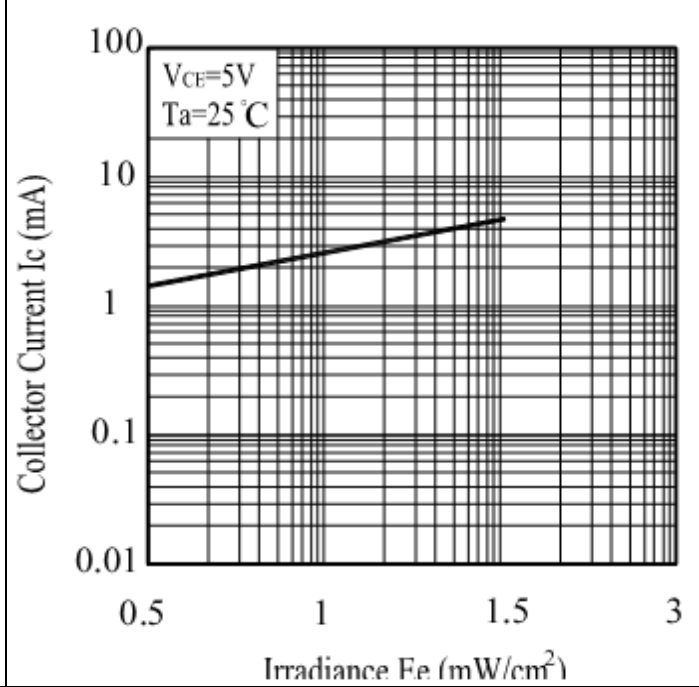
Typical Electro/Optical/Characteristics Curves for PT



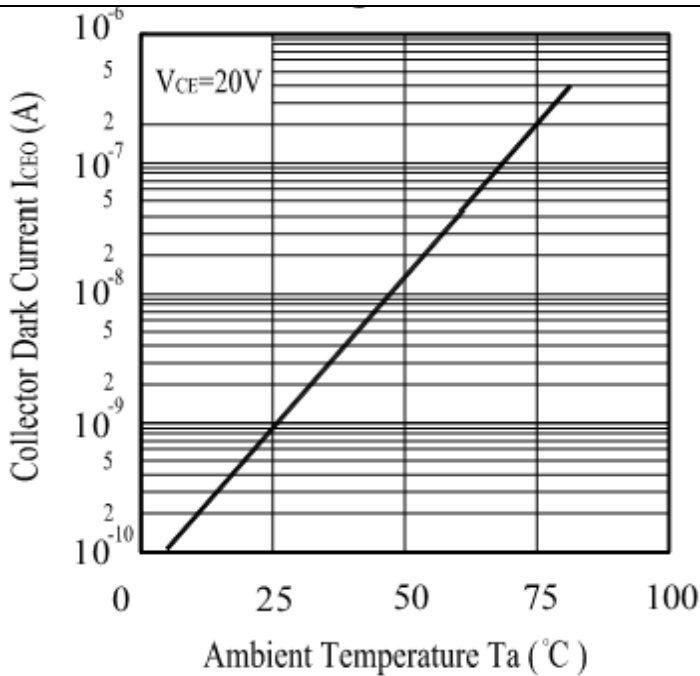
Relative Collector Current vs Ambient Temperature



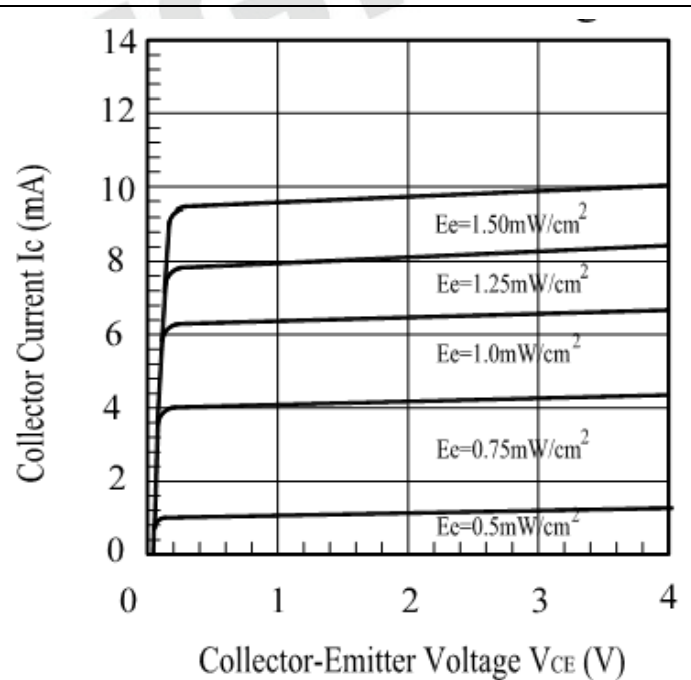
Collector Current vs. Irradiance



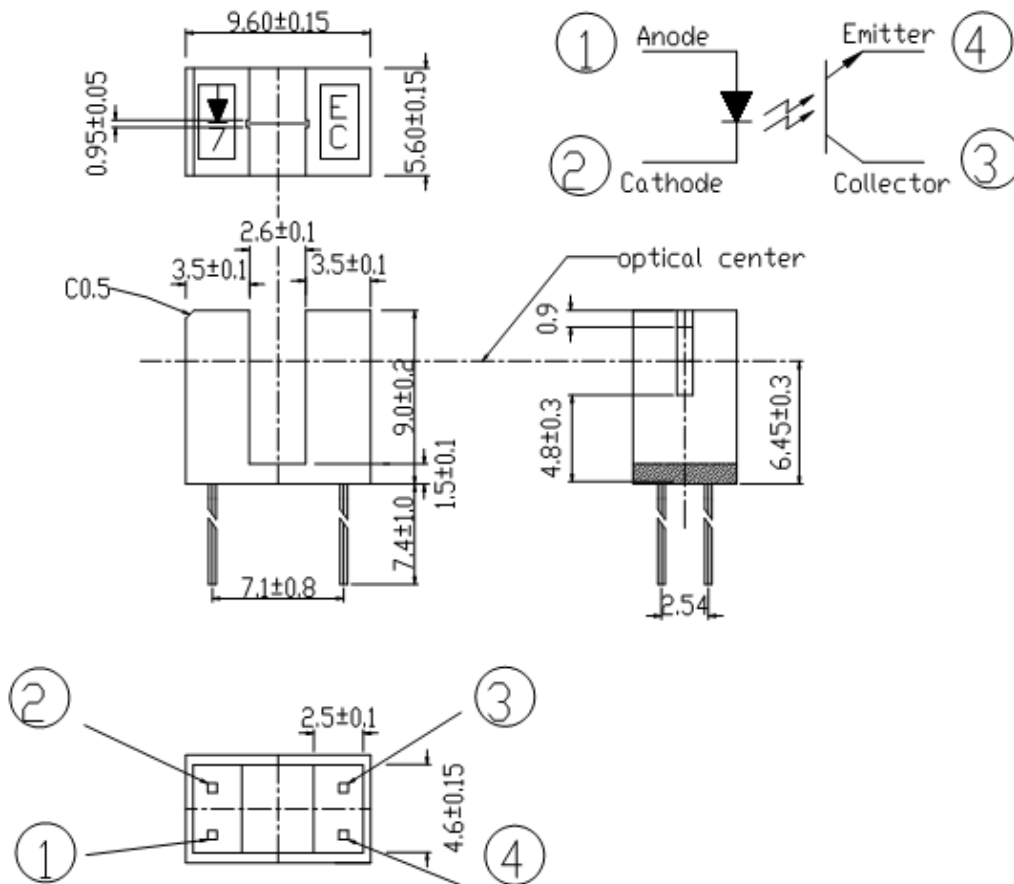
Collector Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Package Dimension



Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions  $\pm 0.2$ 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. 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.

### 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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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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