

### ITR8307/L24/F43

#### Features

- Thin
- Fast response time
- High sensitivity
- Pb free
- High analytic
- Compact

#### Description

The **ITR8307/L24/F43** 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

- Various microcomputer control equipment
- Floppy disk driver
- Cassette type recorder
- Camera
- VCR

#### Device Selection Guide

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

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

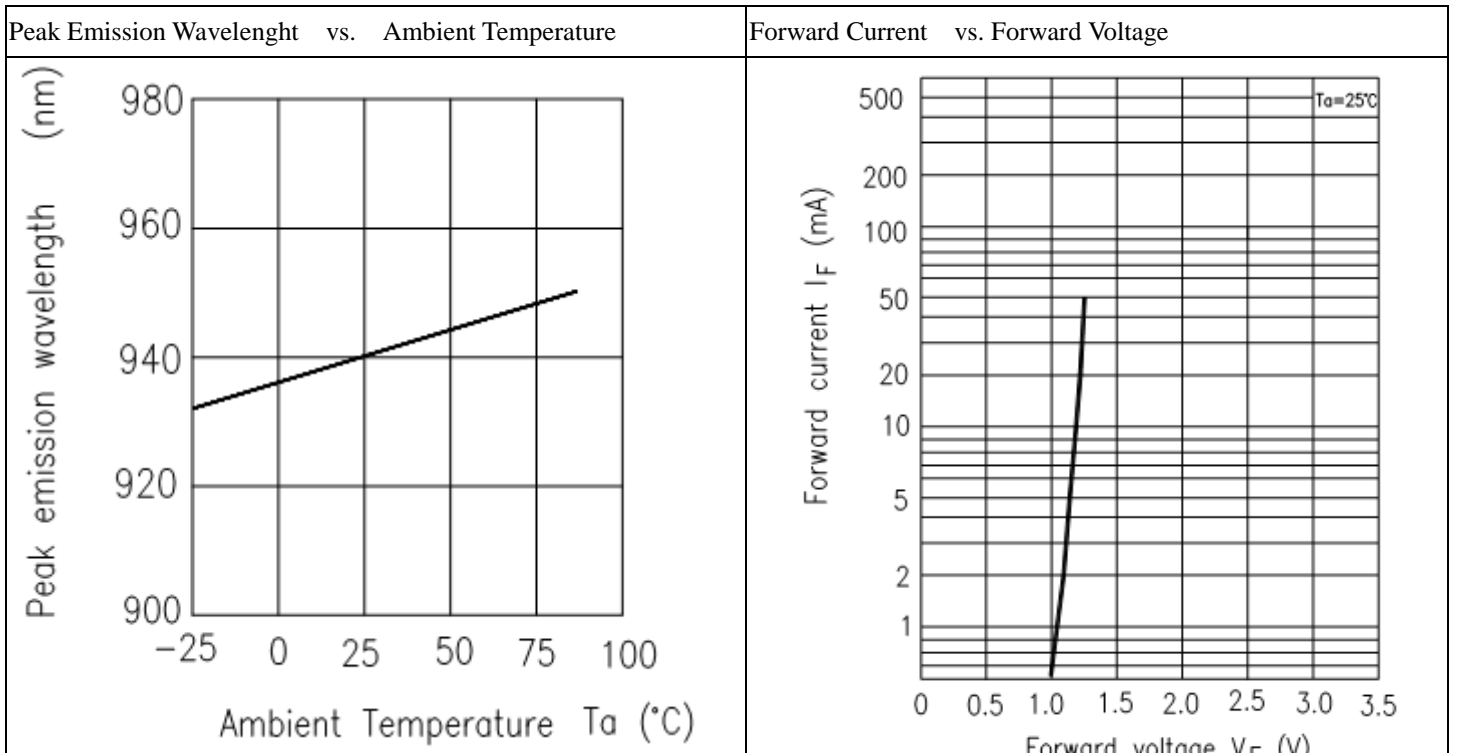
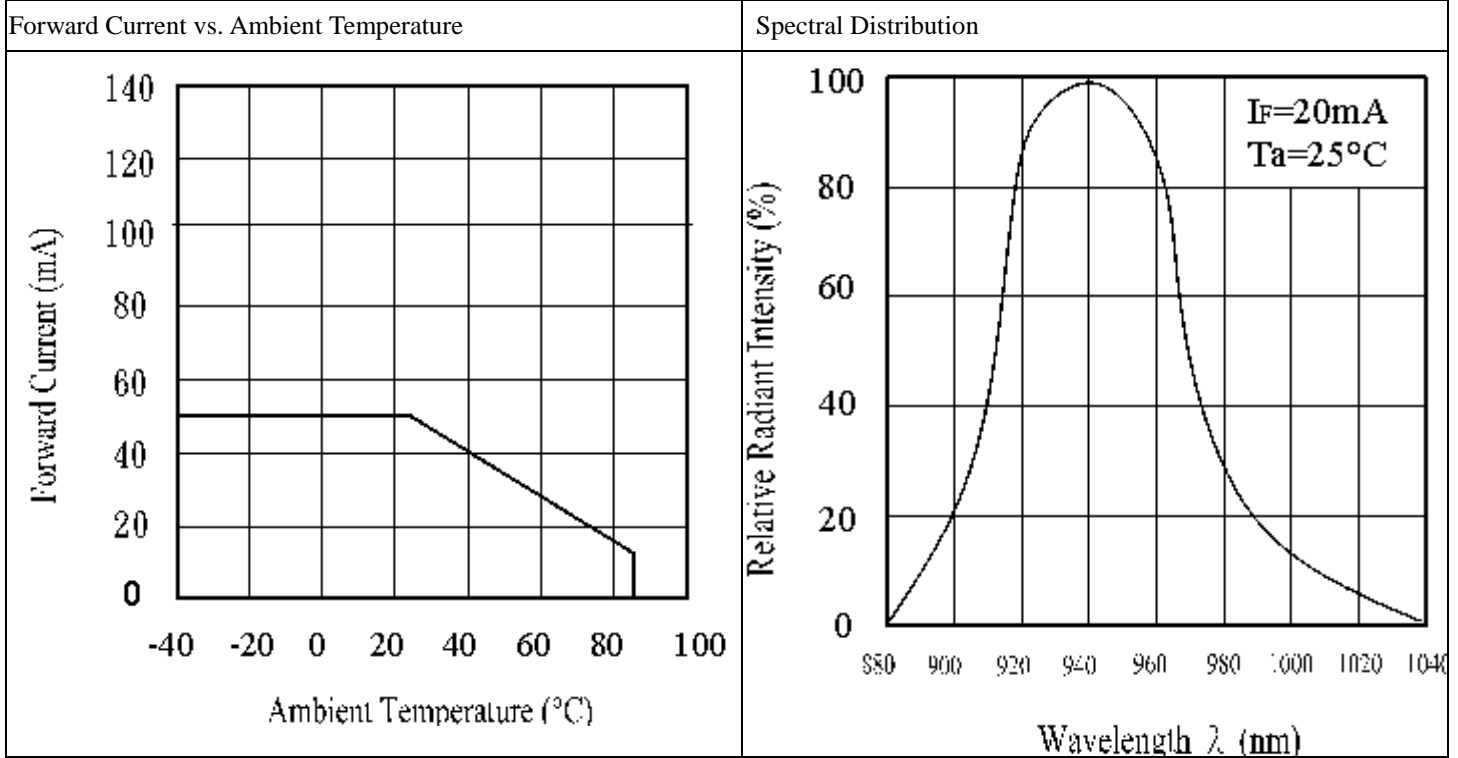
Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V <sub>R</sub>	6	V
	Forward Current	I <sub>F</sub>	50	mA
	Peak Forward Current (*1) Pulse width ≤ 100μ s, Duty cycle=1%	I <sub>FP</sub>	1	A
Output	Collector Power Dissipation	P <sub>C</sub>	100	mW
	Collector Current	I <sub>C</sub>	20	mA
	Collector-Emitter Voltage	B V <sub>CEO</sub>	35	V
	Emitter-Collector Voltage	B V <sub>ECO</sub>	6	V
Operating Temperature		Topr	-25~+85	°C
Storage Temperature		Tstg	-30~+90	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	°C

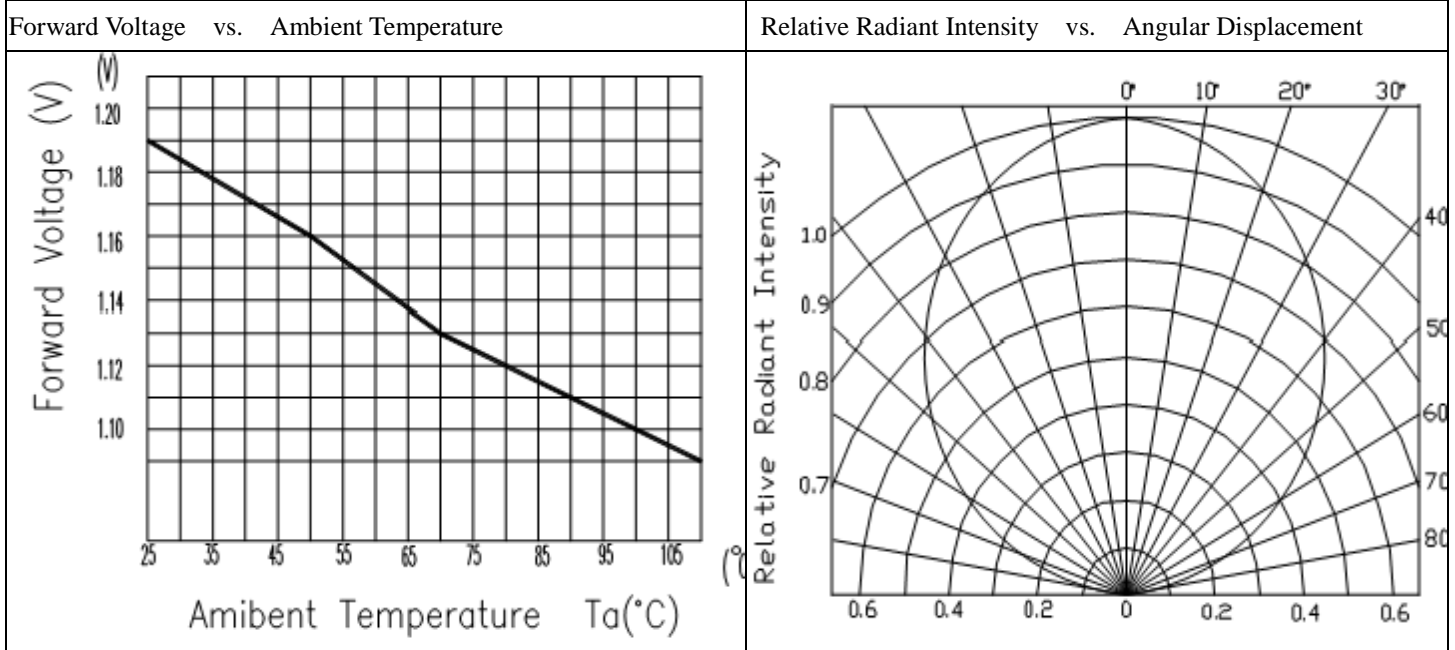
(\*1) tw=100 μ sec. , T=10 msec. (\*2) t=5 Sec

**Electro-Optical Characteristics (Ta=25°C)**

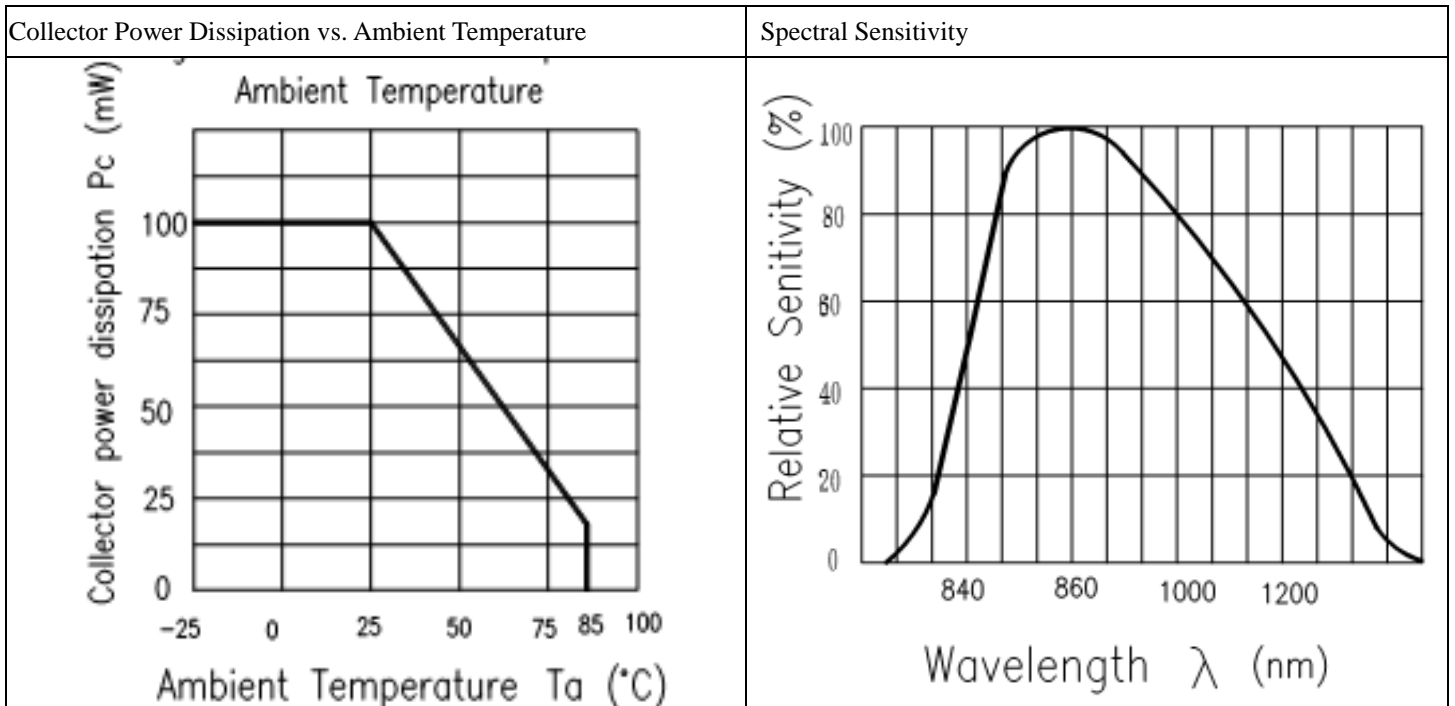
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	$V_F$	---	1.2	1.4	V	$I_F=20\text{mA}$
	Reverse Current	$I_R$	---	---	10	$\mu\text{A}$	$V_R=5\text{V}$
	Peak Wavelength	$\lambda_p$	---	940	---	nm	$I_F=20\text{mA}$
Output	Dark Current	$I_{CEO}$	---	---	1	$\mu\text{A}$	$V_{CE}=10\text{V}$ , $E_e=1\text{mW/cm}^2$
Transfer Characteristics	Collect Current	$I_C(\text{ON})$	0.5	---	---	mA	$V_{CE}=5\text{V}$ $I_F=20\text{mA}$
	Leakage Current	$I_{LEAK}$	---	---	5	$\mu\text{A}$	$V_{CE}=2\text{V}$ $I_F=4\text{mA}$
	Rise time	$t_r$	---	80	400	$\mu\text{s}$	$V_{CE}=2\text{V}$ $I_C=10\text{mA}$ $R_L=100\Omega$ $d = 1\text{mm}$
	Fall time	$t_f$	---	70	400	$\mu\text{s}$	

Typical Electrical/Optical/Characteristics Curves for IR

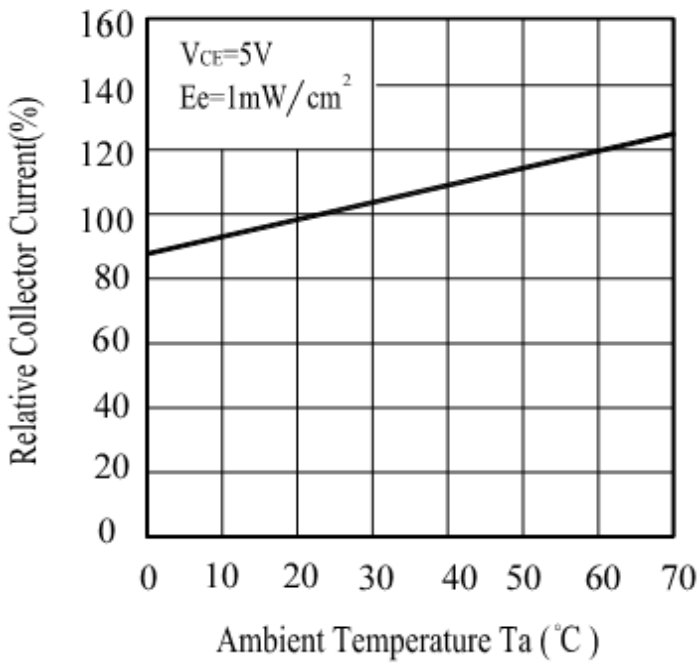




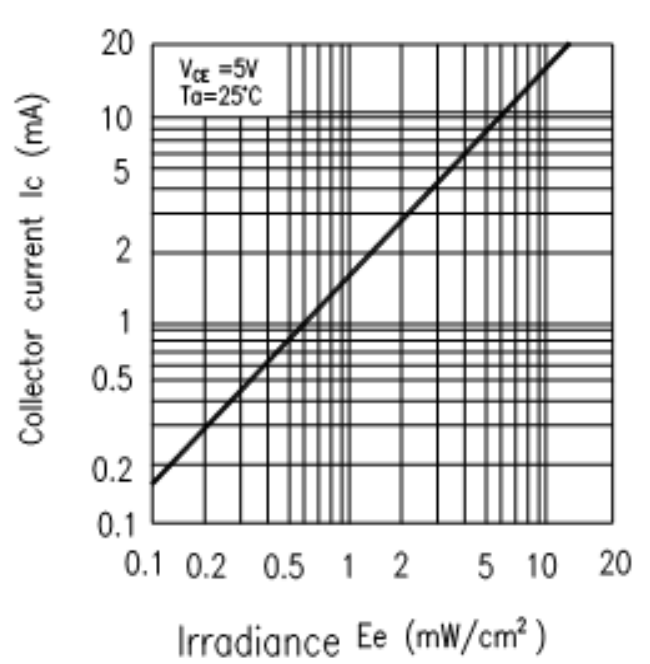
Typical Electro/Optical/Characteristics Curves for PT



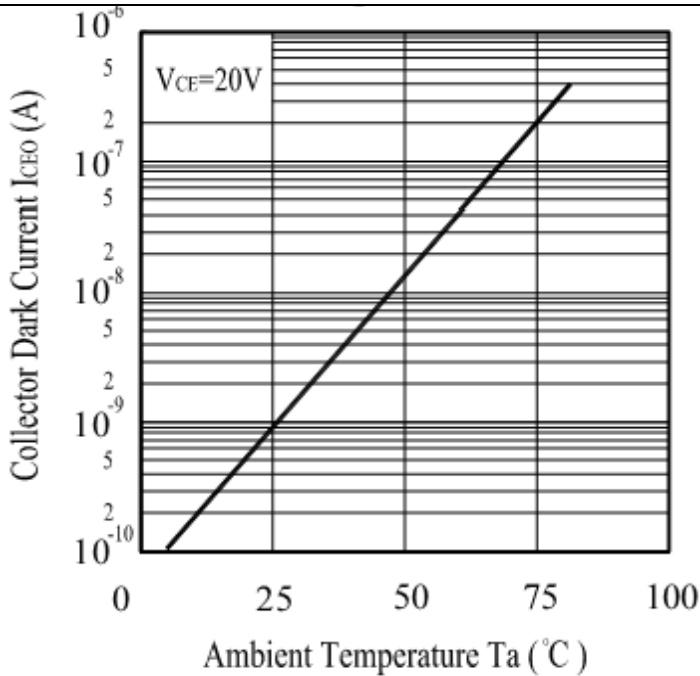
Relative Collector Current vs Ambient Temperature



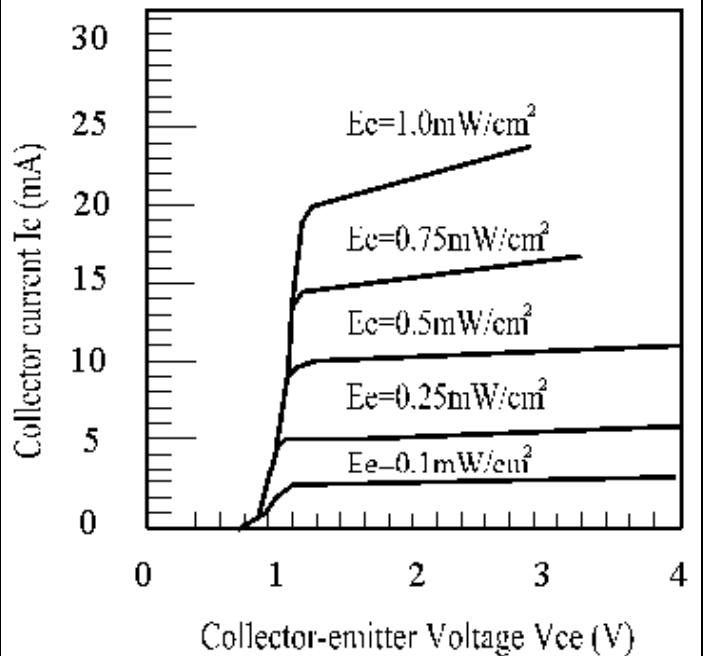
Collector Current vs. Irradiance



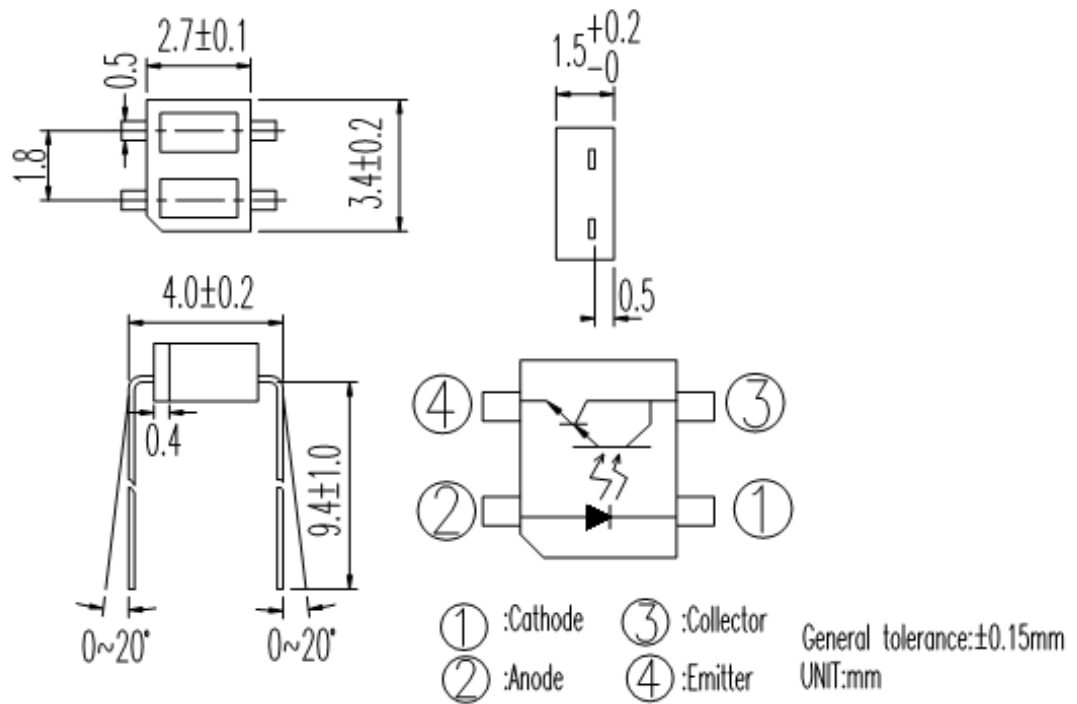
Collector Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Package Dimension



- Notes:** 1. All dimensions are in millimeters  
2. Tolerances unless dimensions  $\pm 0.25$  mm

### Packing Quantity Specification

1. 1000pcs/1Bag
2. 1Bag/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.
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