

Opto Interrupter ITR20001/T



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
- Compliance with EU REACH
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)

Description

- The ITR20001/T 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 reflecting object close to ITR, phototransistor receives the reflecting 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	Water clear
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	20	mA
	Collector-Emitter Voltage	B V _{CEO}	30	V
	Emitter-Collector Voltage	B V _{ECO}	5	V
Operating Temperature		Topr	-40~+85	°C
Storage Temperature		Tstg	-40~+85	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	°C

(*1) tw=100 μsec. , T=10 msec.

(*2) t=5 Sec

Electro-Optical Characteristics (Ta=25℃)

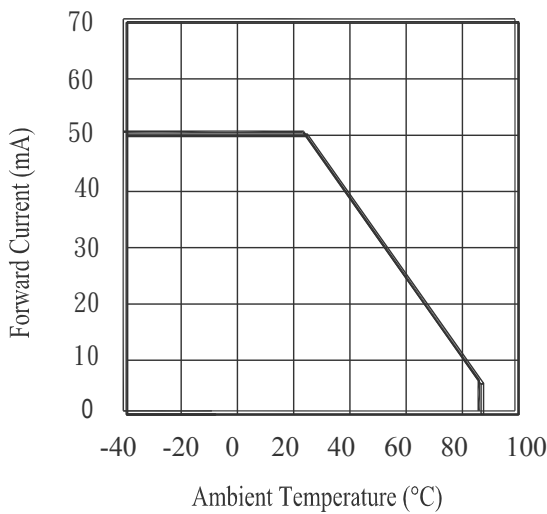
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V _F	---	1.2	1.5	V	I _F =20mA
	Reverse Curren	I _R	---	---	10	μA	V _R =5V
	Peak Wavelength	λ _P	---	940	---	nm	I _F =20mA
Output	Dark Current	I _{CEO}	---	---	100	nA	V _{CE} =5V,Ee=0mW/cm ²
	C-E Saturation Voltage	V _{CE(sat)}	---	---	0.4	V	I _C =2mA Ee=1mW/cm ²
Transfer Characteristics	Collect Current	I _{C(ON)}	200	---	---	uA	V _{CE} =5V,I _F =20mA
		I _{C(OFF)}	---	---	2		
	Rise time	t _r	---	25	---	μsec	V _{CE} =5V,I _C =100uA ,R _L =100Ω
	Fall time	t _f	---	25	---	μsec	

Note:
 *Measurement Uncertainty of Forward Voltage: ±0.1V
 *Measurement Uncertainty of Luminous Intensity: ±10%
 *Measurement Uncertainty of Dominant Wavelength ±1.0nm

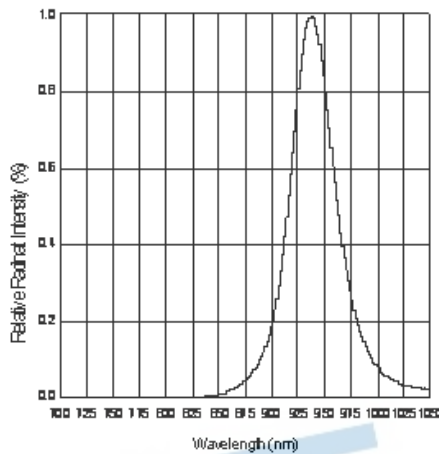


Typical Electrical/Optical/Characteristics Curves for IR

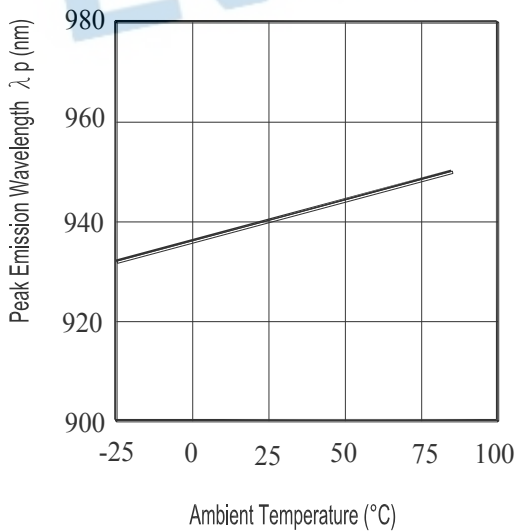
Forward Current vs. Ambient Temperature



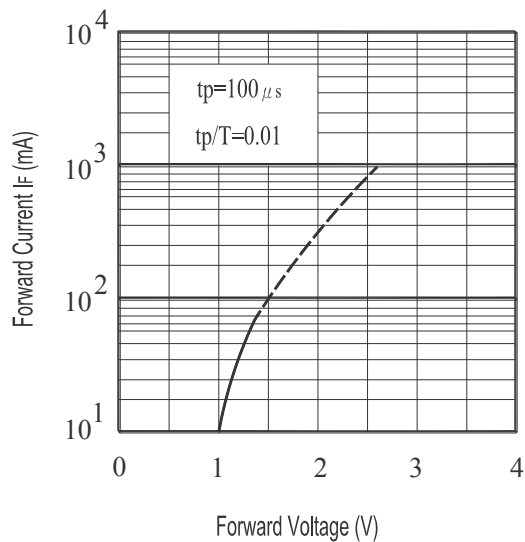
Spectral Sensitivity

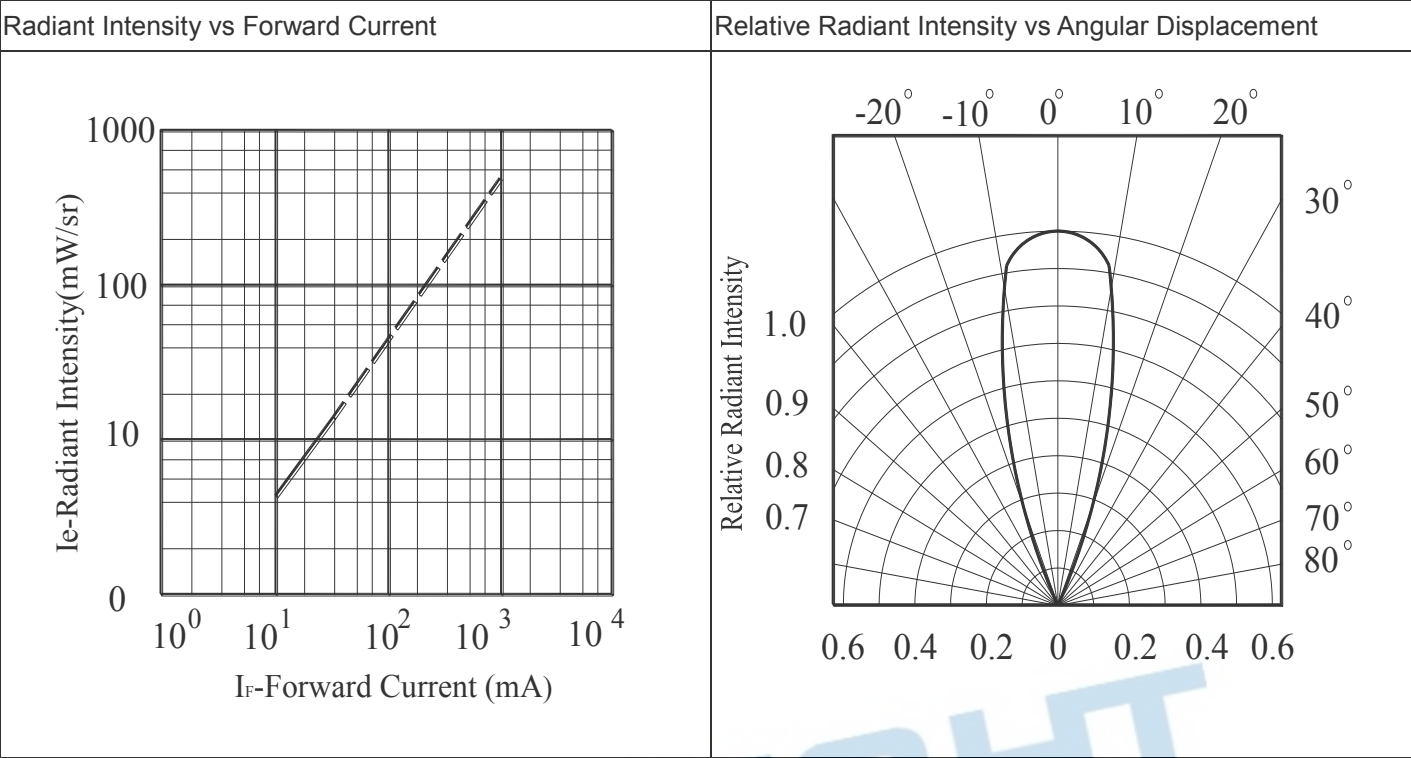


Peak Emission Wavelength vs. Ambient Temperature



Forward Current vs. Forward Voltage

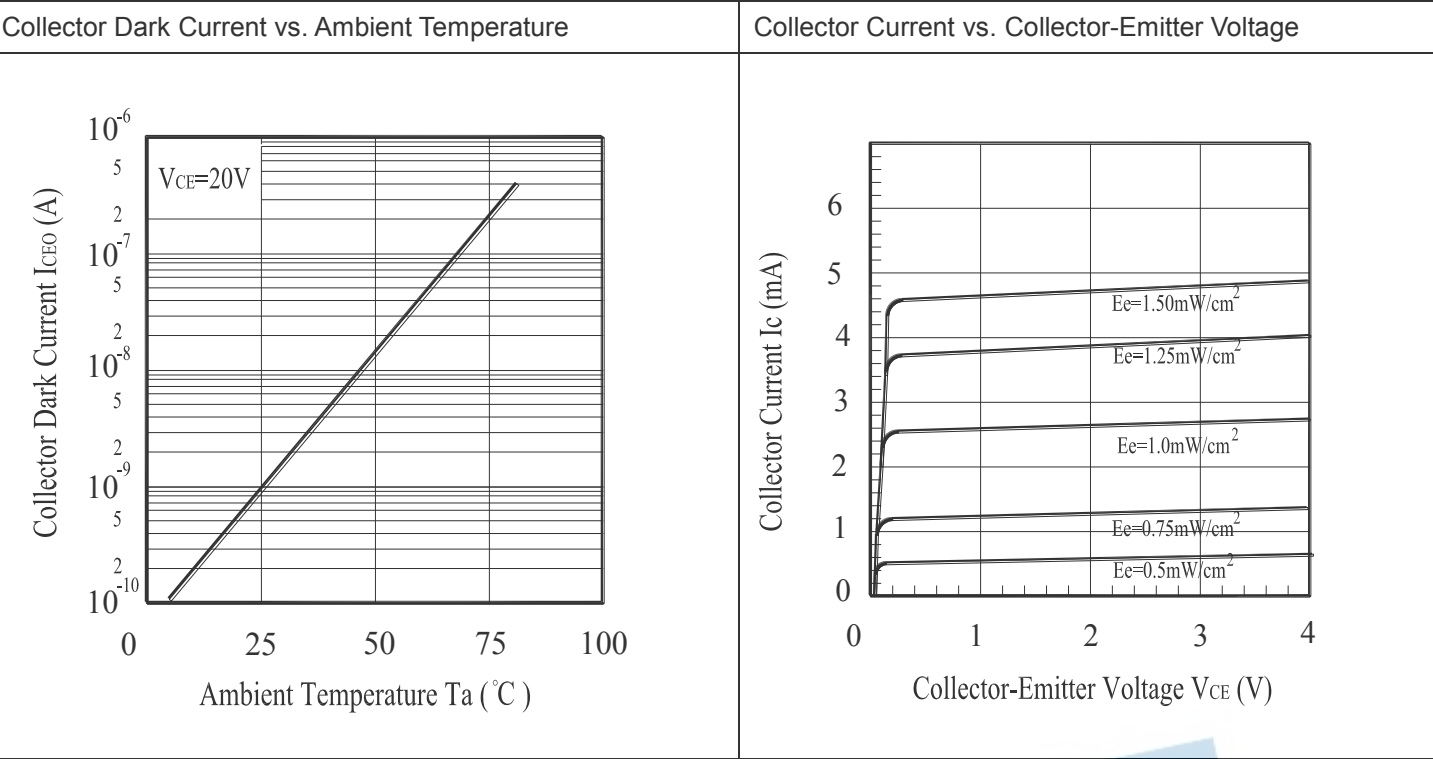




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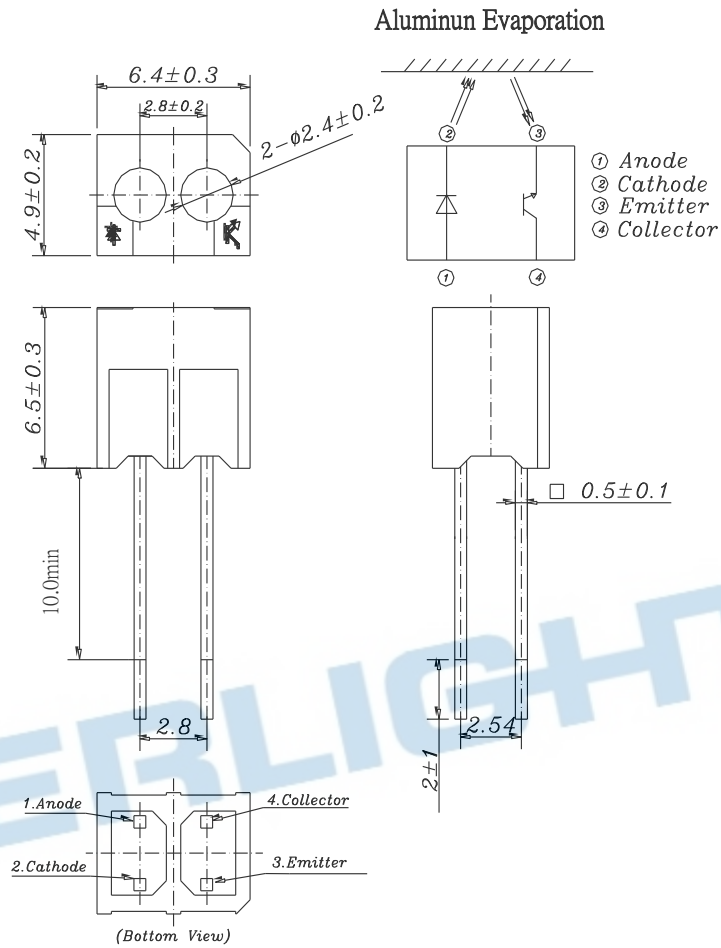
Typical Electrical/Optical/Characteristics Curves for PT

Collector Power Dissipation vs. Ambient Temperature Collector Power Dissipation P_d (mW) Ambient Temperature T_a (°C)	Spectral Sensitivity Relative Spectral Sensitivity Wavelength λ (nm)
Relative Collector Current vs. Ambient Temperature Relative Collector Current (%) Ambient Temperature T_a (°C) $V_{CE}=5V$ $E_e=1mW/cm^2$	Collector Current vs. Irradiance Collector Current I_c (mA) Irradiance E_e (mW/cm²) $V_{CE}=5V$ $T_a=25^\circ C$



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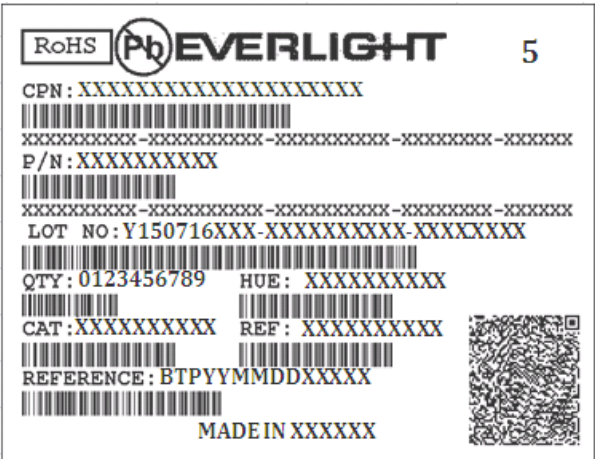
Package Dimension



Note: Tolerances unless dimensions $\pm 0.25 \text{ mm}$

Packing Quantity Specification
 1.200PCS/1Bag, 6Bags/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

DISCLAIMER

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2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
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