DATASHEET

Opto Interrupter
ITR20001/T

Features

- Fast response time
- High analytic
- Cut-off visible wavelength λp=940nm
- 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℃)

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 ≦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	℃
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

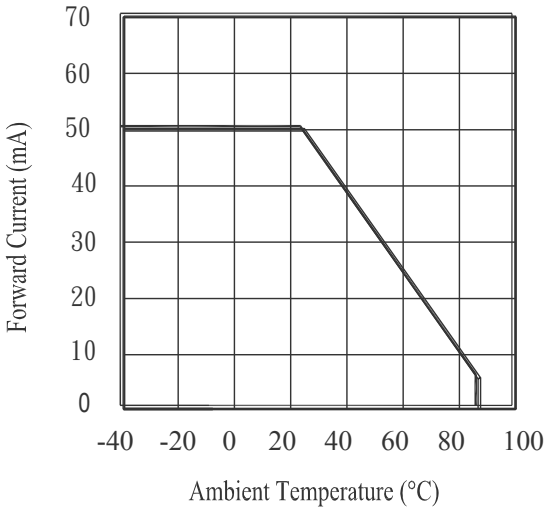
Electro-Optical Characteristics (Ta=25℃)

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	

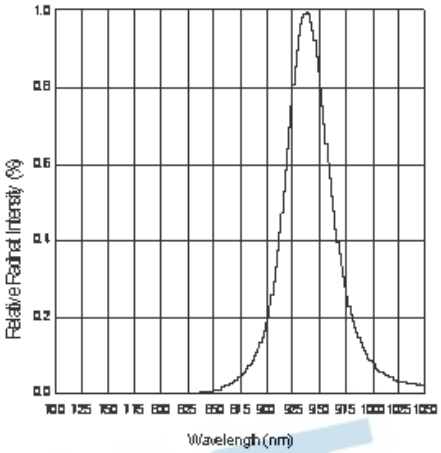
Note:
*Measurement Uncertainty of Forward Voltage: ±0.1V
*Measurement Uncertainty of Luminous Intensity: ±10%
*Measurement Uncertainty of Dominant Wavelength ±1.0nm

Typical Electrical/Optical/Characteristics Curves for IR

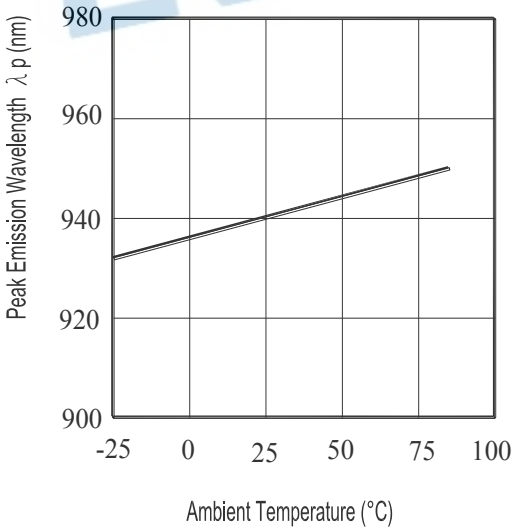
Forward Current vs. Ambient Temperature



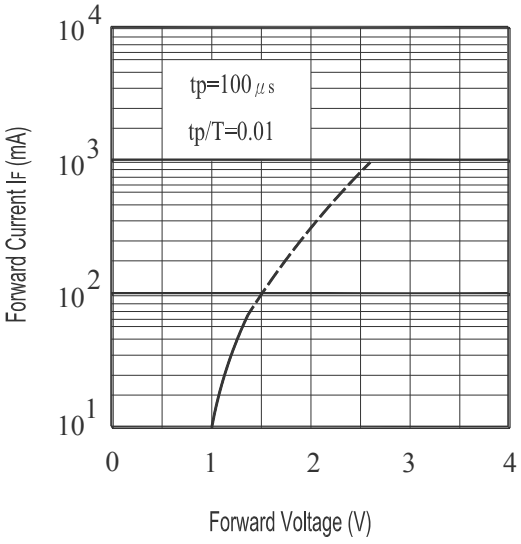
Spectral Sensitivity

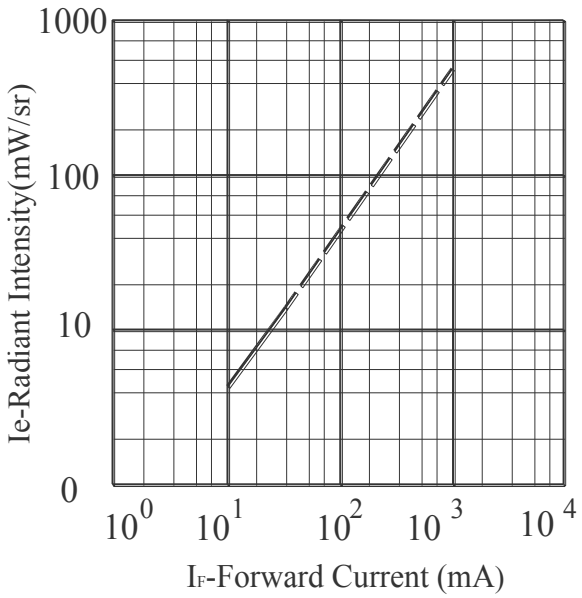
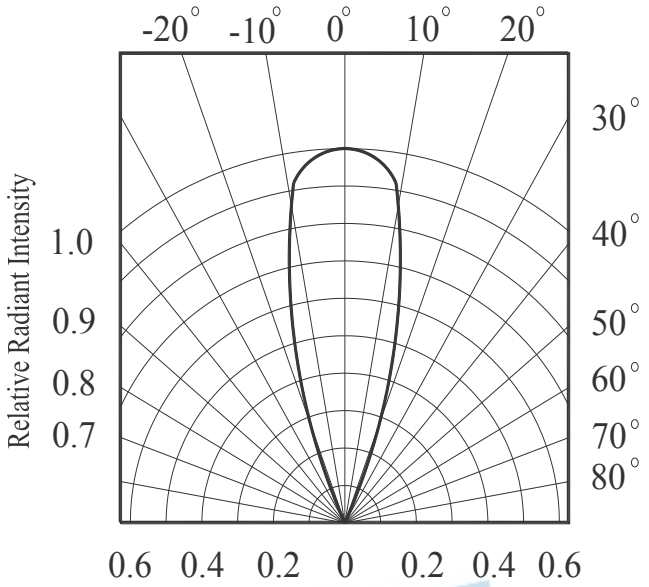


Peak Emission Wavelength vs. Ambient Temperature



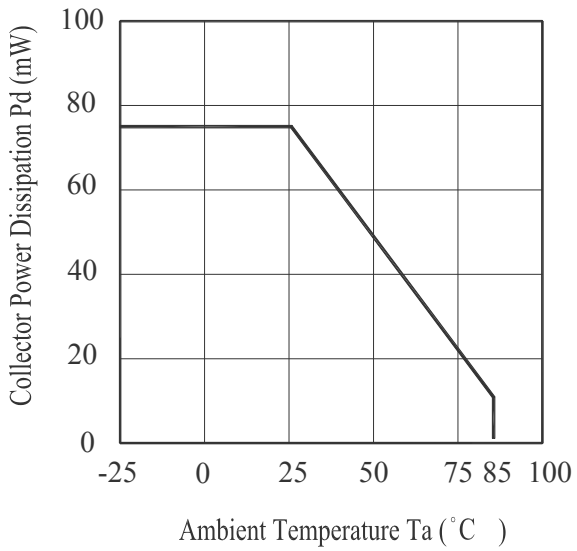
Forward Current vs. Forward Voltage



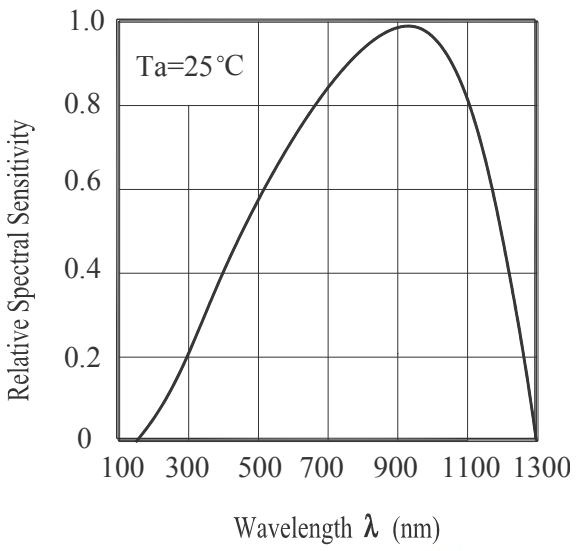
Radiant Intensity vs Forward Current	Relative Radiant Intensity vs Angular Displacement
	

Typical Electrical/Optical/Characteristics Curves for PT

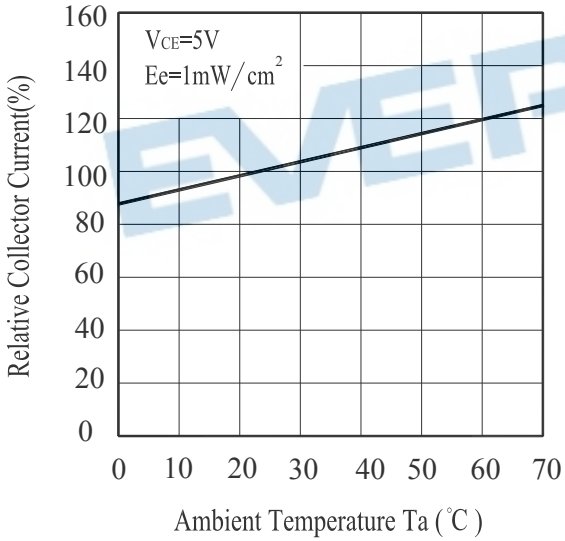
Collector Power Dissipation vs. Ambient Temperature



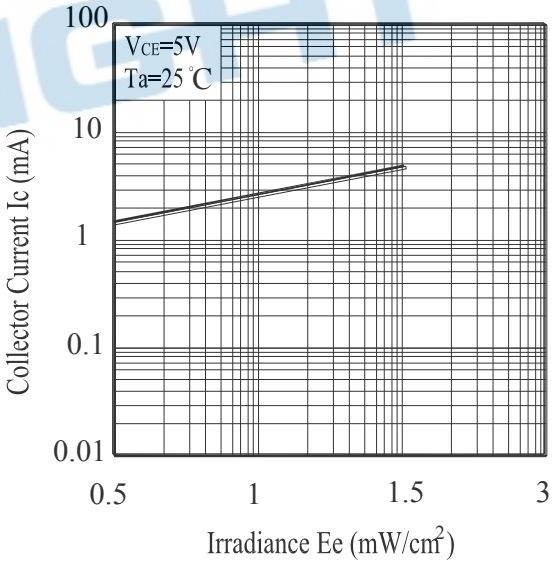
Spectral Sensitivity

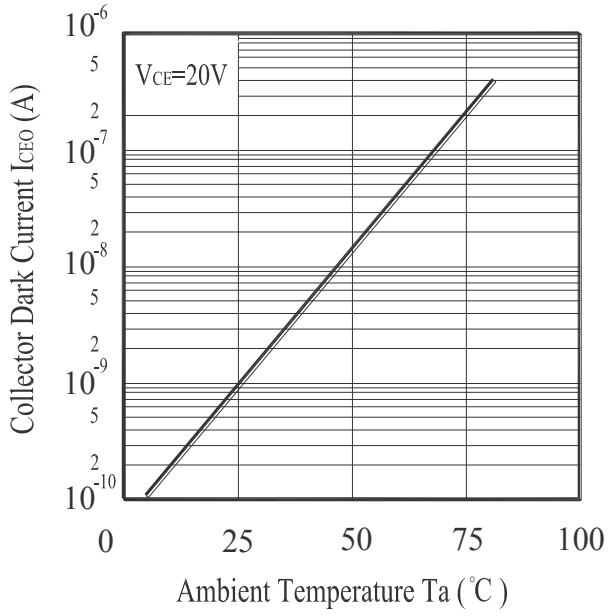
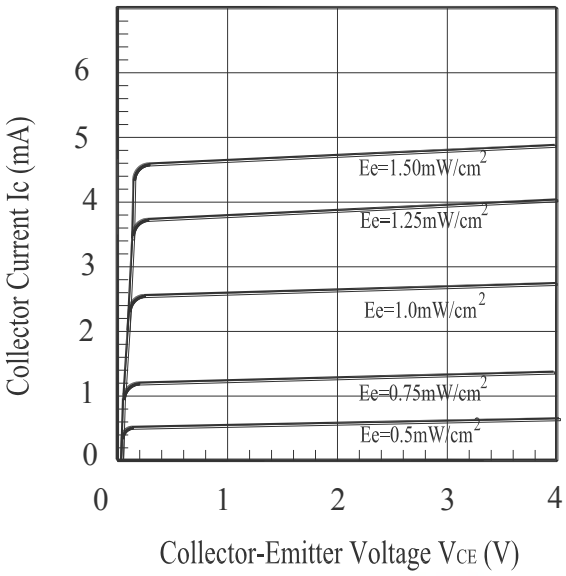


Relative Collector Current vs. Ambient Temperature

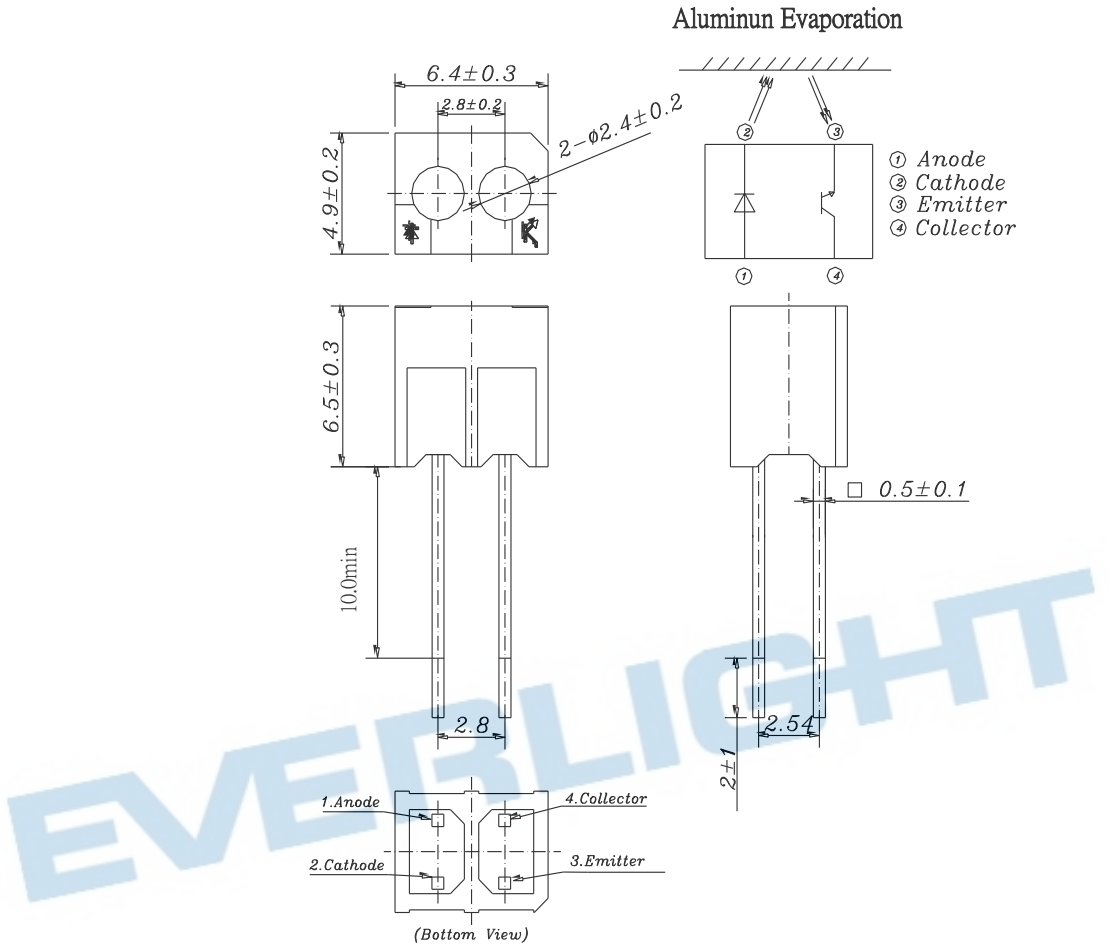


Collector Current vs. Irradiance



Collector Dark Current vs. Ambient Temperature	Collector Current vs. Collector-Emitter Voltage
	

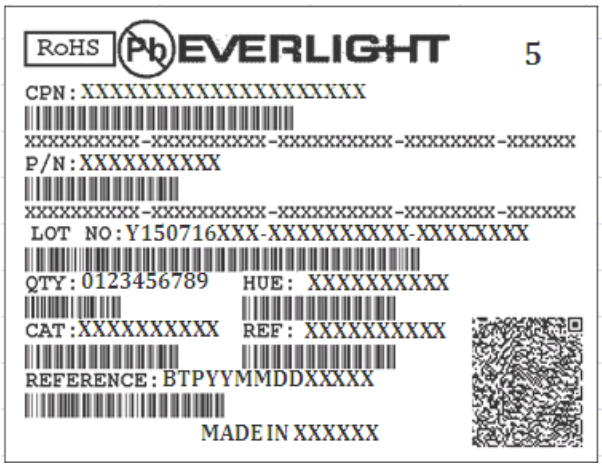
Package Dimension



Note: Tolerances unless dimensions ±0.25mm

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

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
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