

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 < 900ppm, Cl < 900ppm, Br+ Cl < 1500ppm)

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	GaAIAs	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

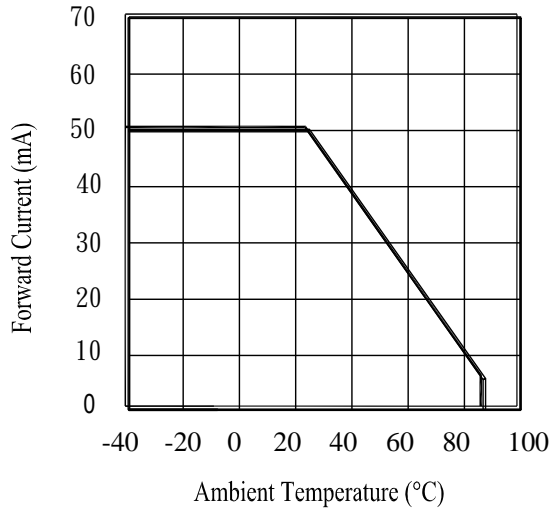
Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	---	1.2	1.5	V	$I_F=20\text{mA}$
	Reverse Curren	I_R	---	---	10	μA	$V_R=5\text{V}$
	Peak Wavelength	λ_P	---	940	---	nm	$I_F=20\text{mA}$
Output	Dark Current	I_{CEO}	---	---	100	nA	$V_{CE}=5\text{V}, E_e=0\text{mW/cm}^2$
	C-E Saturation Voltage	$V_{CE}(\text{sat})$	---	---	0.4	V	$I_C=2\text{mA}$ $E_e=1\text{mW/cm}^2$
Transfer Characteristics	Collect Current	$I_{C(\text{ON})}$	200	---	---	μA	$V_{CE}=5\text{V}, I_F=20\text{mA}$
		$I_{C(\text{OFF})}$	---	---	2		
	Rise time	t_r	---	25	---	μsec	$V_{CE}=5\text{V}, I_C=100\mu\text{A}$ $, R_L=100\Omega$
	Fall time	t_f	---	25	---	μsec	

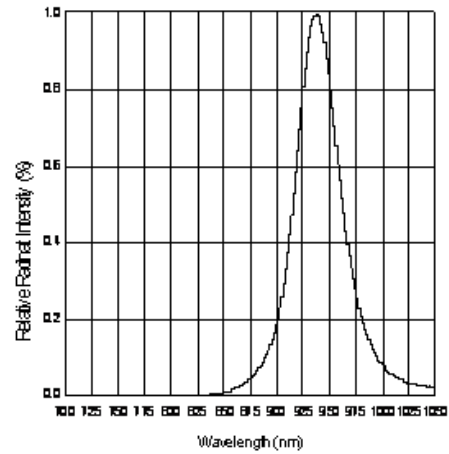
Tolerance of Collect Current: $\pm 20\%$

Typical Electrical/Optical/Characteristics Curves for IR

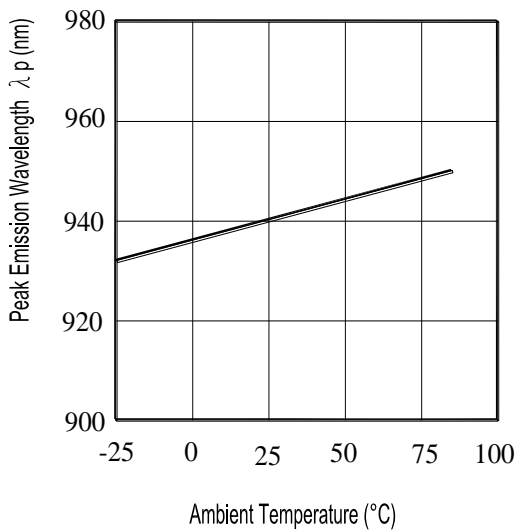
Forward Current vs. Ambient Temperature



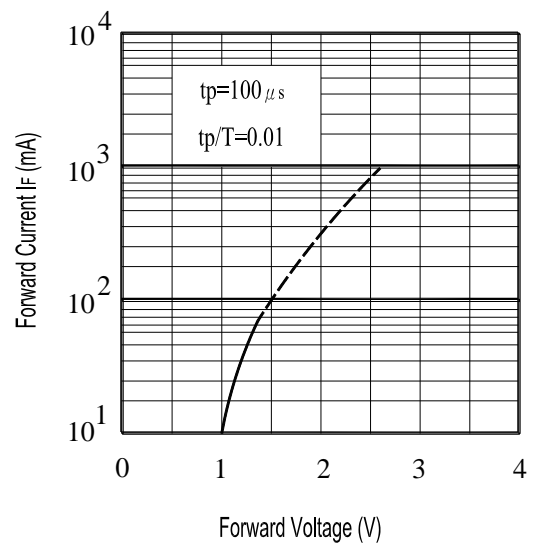
Spectral Sensitivity



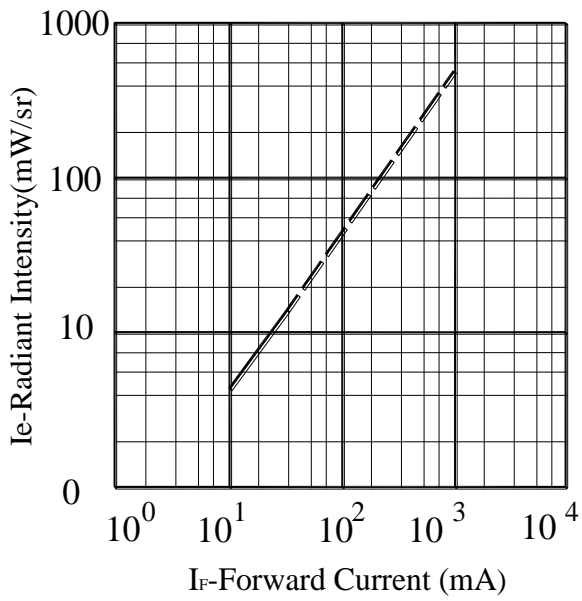
Peak Emission Wavelength vs. Ambient Temperature



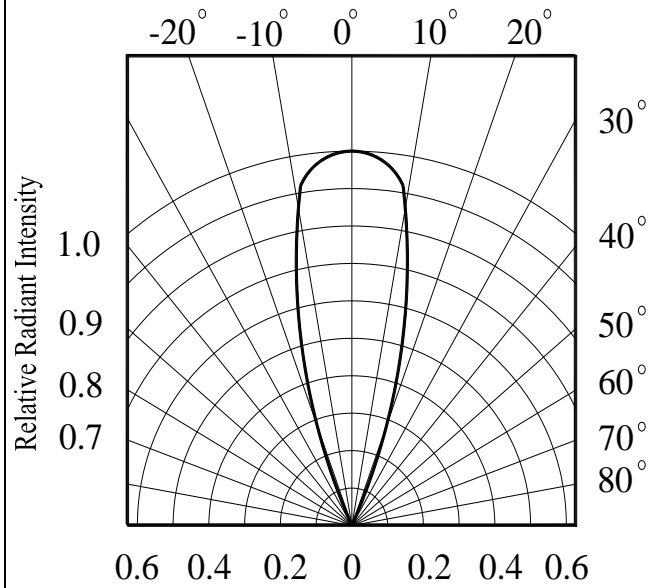
Forward Current vs. Forward Voltage



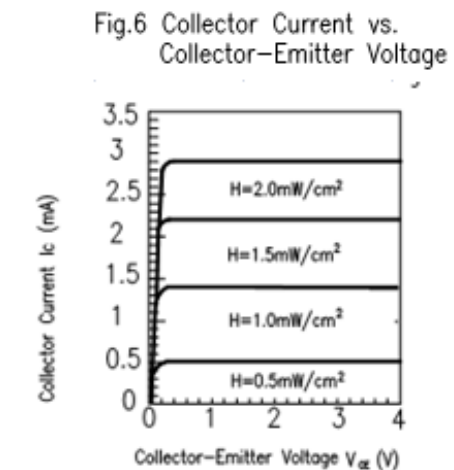
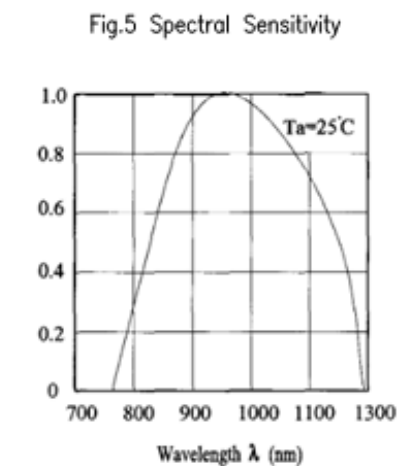
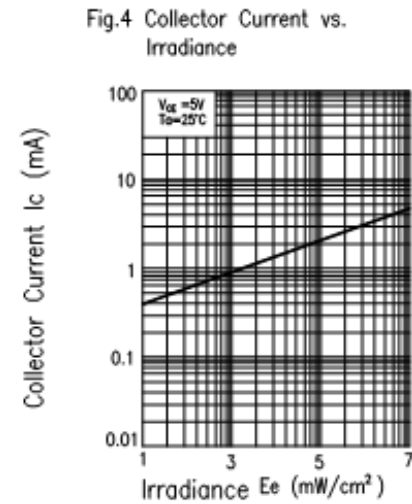
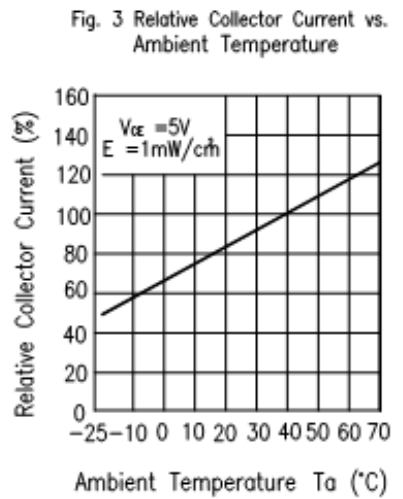
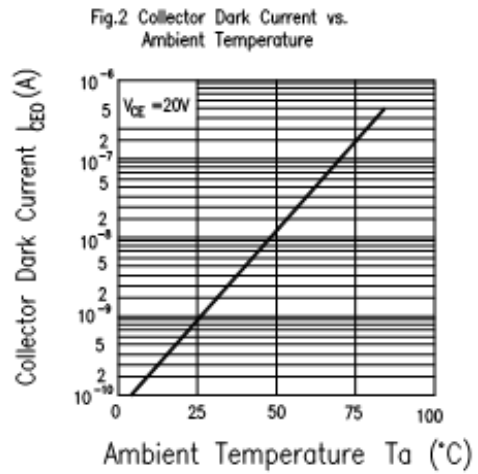
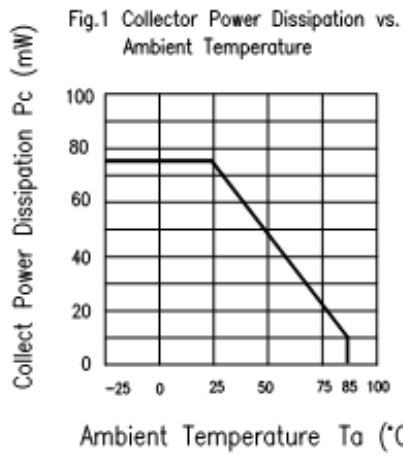
Radiant Intensity vs Forward Current



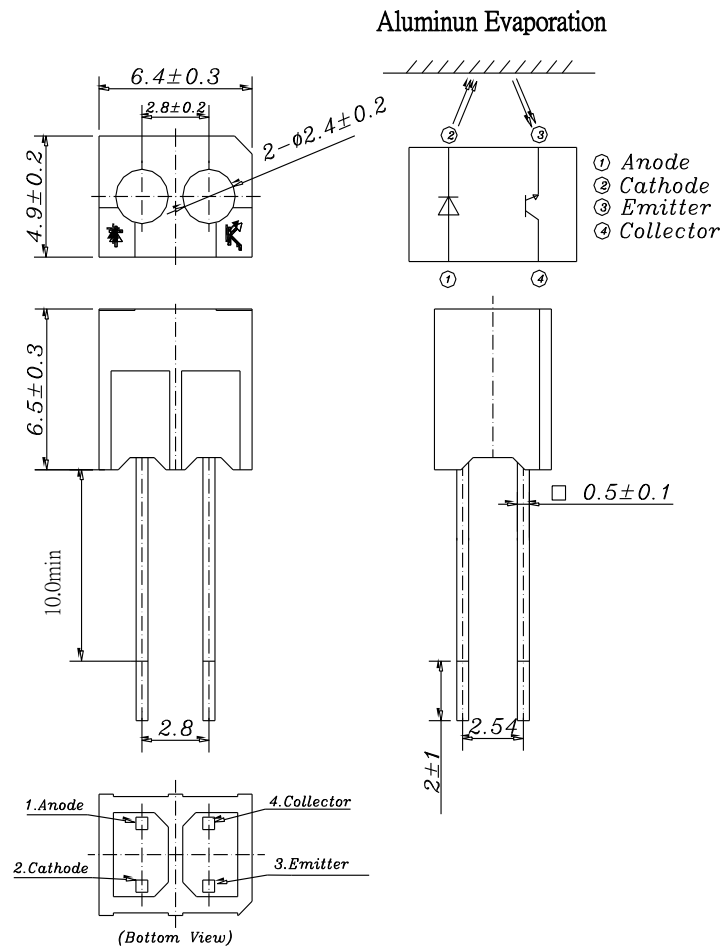
Relative Radiant Intensity vs Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT



Package Dimension



Note: Tolerances unless dimensions ± 0.25 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

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
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