DATASHEET

ITR20002

Features

- Fast response time
- High analytic
- Cut-off visible wavelength λp=840nm
- 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 ITR20002 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 radiation

Applications

- Mouse Copier
- Floppy disk driver
- Non-contact Switching
- For Direct PC Board

Device Selection Guide

Device No.	Chip Materials	Lens Color
IR	GaAlAs	Water clear
PT	Silicon	Water clear

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	100	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	60	mA
	Peak Forward Current (*1) Pulse width ≦100μs, Duty cycle=1%	I_{FP}	1	A
Output	Collector Power Dissipation	Pc	80	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	35	V
	Emitter-Collector Voltage	B V_{ECO}	6	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) tw=100 μsec. , T=10 msec. (*2) t=5 Sec

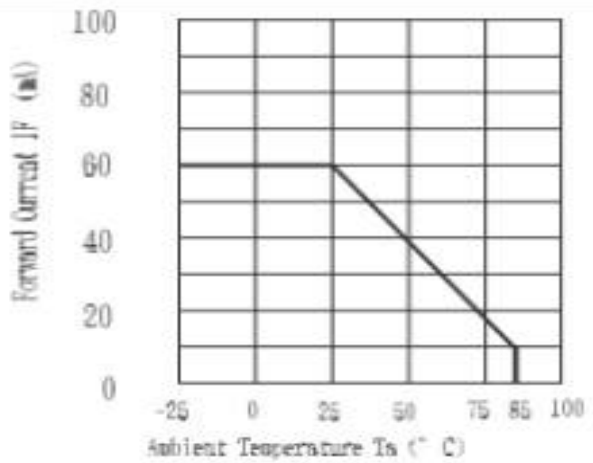
Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F		1.2	1.5	V	I_F=20mA
	Reverse Current	I_R	---	---	10	μA	V_R=5V
	Peak Wavelength	λ_P	---	940	---	nm	I_F=20mA
Output	Dark C urrent	I_{CEO}	---	---	100	nA	V_{CE}=20V,Ee=0mW/cm^2
	C-E Saturation Voltage	V_{CE}(sat)	---	---	0.4	V	I_C=0.04mA IF=40mA
Transfer Characteristics	Collect Current	I_C(ON)	0.04	---	0.9	mA	VCE=5V IF=20mA
	Rise time	t_r	---	20	---	μsec	V_{CE}=2V,I_C=100uA ,R_L=100Ω
	Fall time	t_f	---	25	---	μsec	

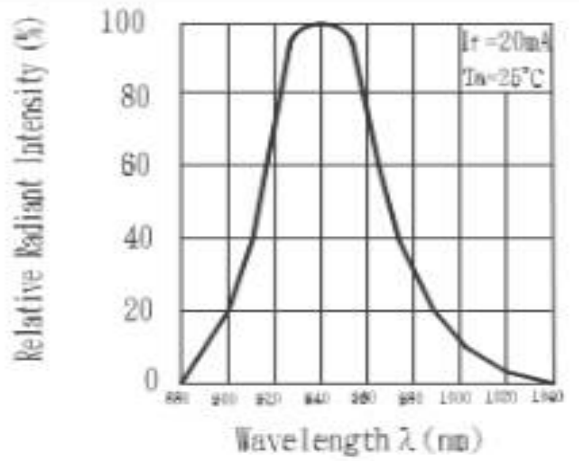
IC(on) at the testing condition—with reflector in 5mm away

Typical Electrical/Optical/Characteristics Curves for IR

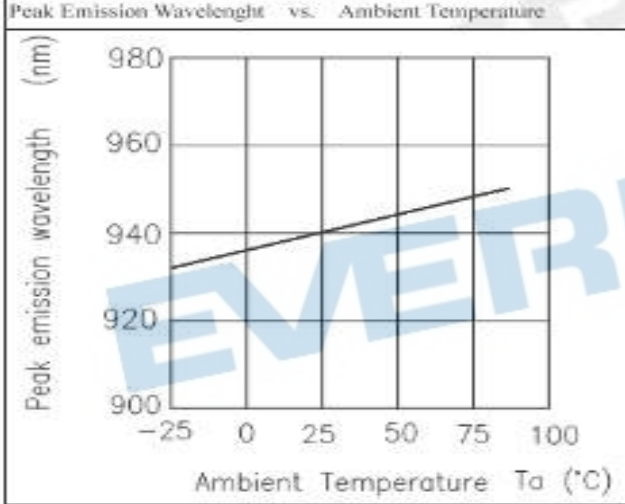
Forward Current vs. Ambient Temperature



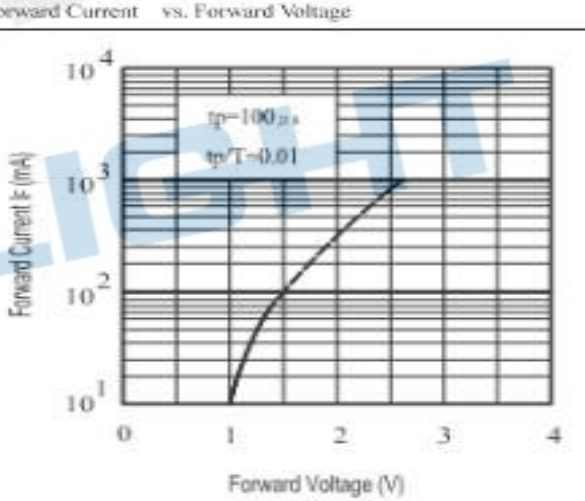
Spectral Distribution



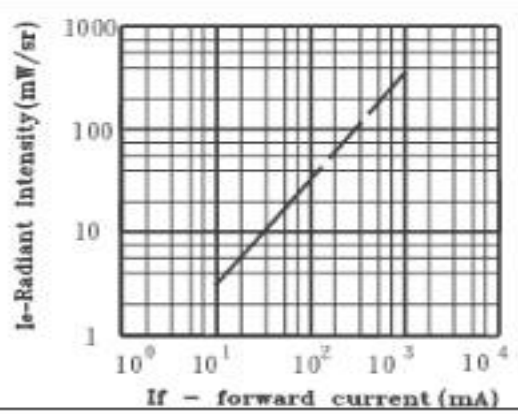
Peak Emission Wavelenght vs. Ambient Temperature



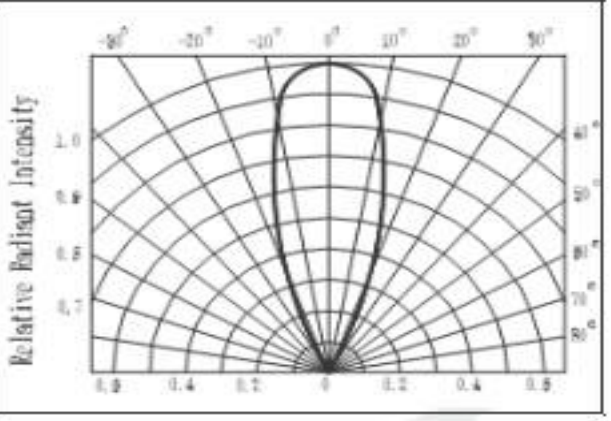
Forward Current vs. Forward Voltage



Forward Current vs. Ambient Temperature

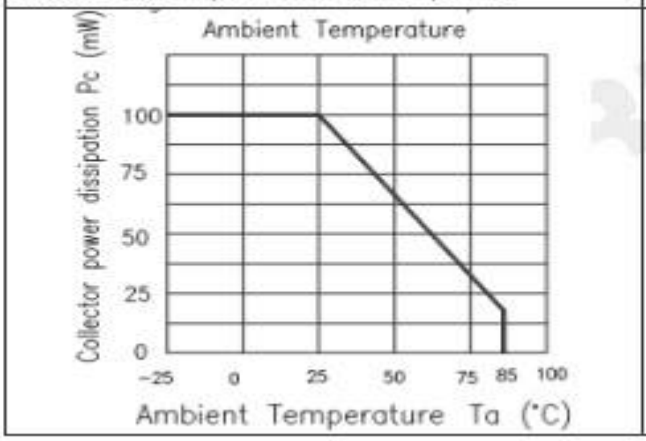


Relative Radiant Intensity vs. Angular Displacement

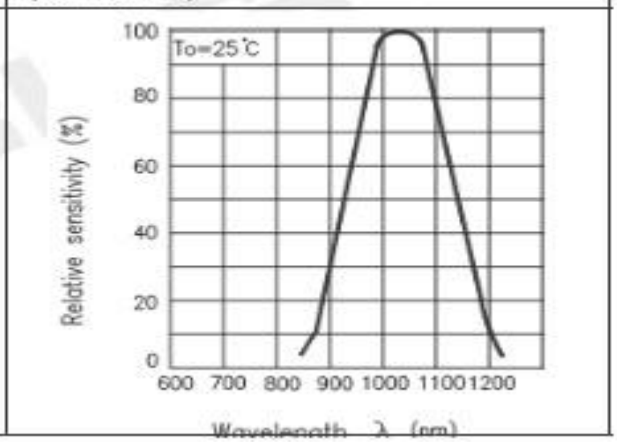


Typical Electrical/Optical/Characteristics Curves for PT

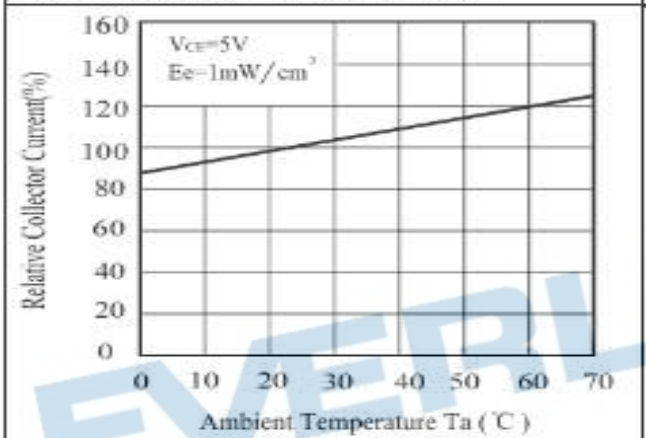
Collector Power Dissipation vs. Ambient Temperature



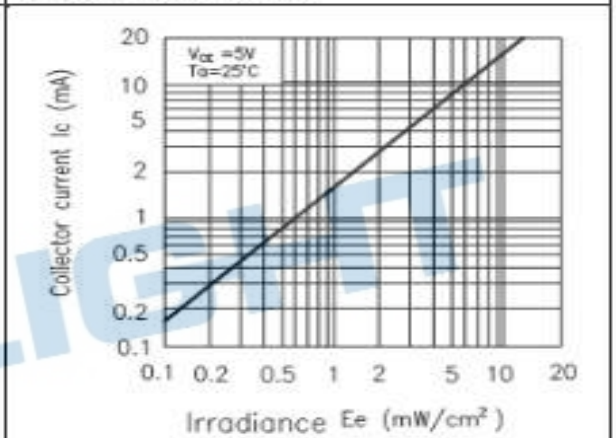
Spectral Sensitivity



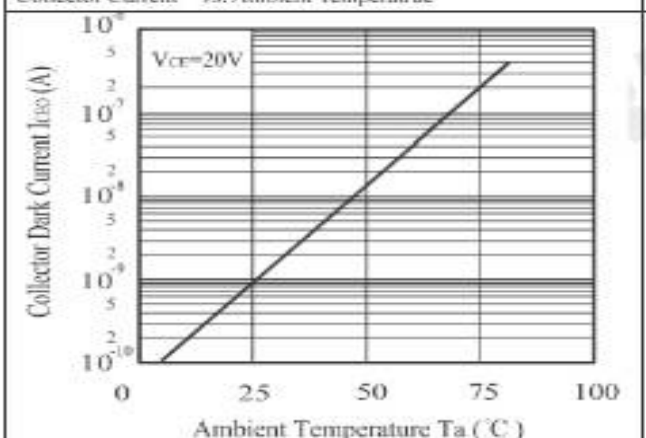
Relative Collector Current vs Ambient Temperature



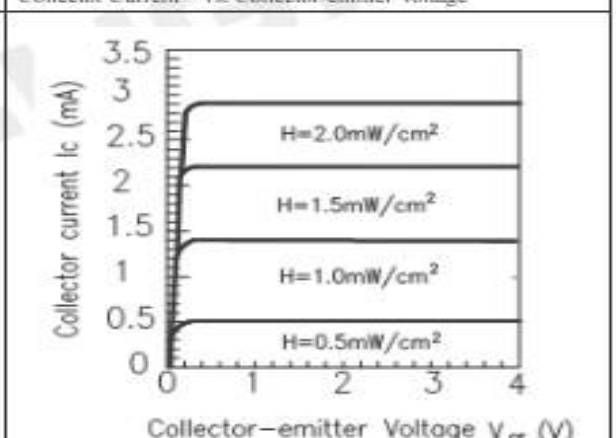
Collector Current vs. Irradiance



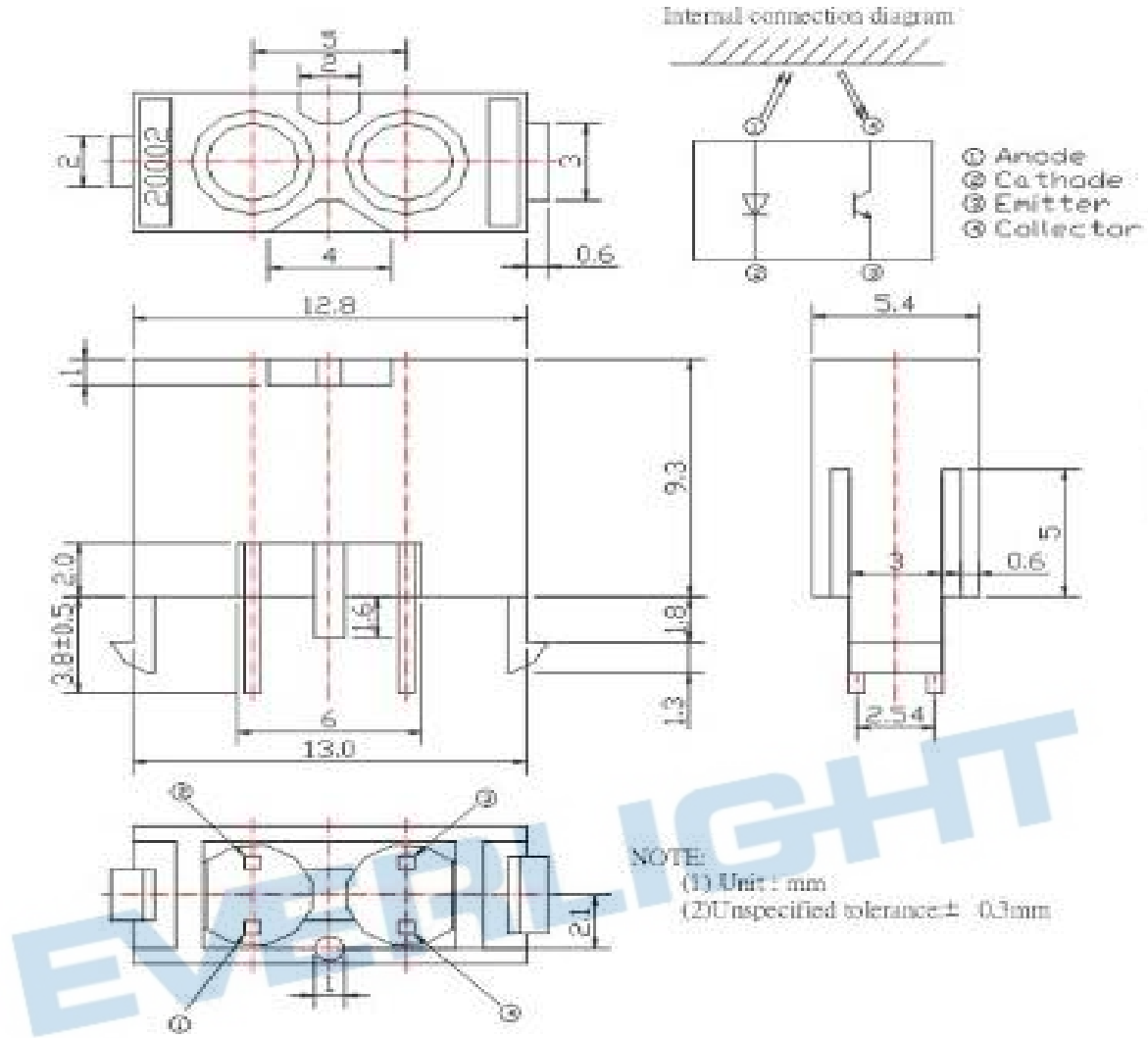
Collector Current vs. Ambient Temperatrue



Collector Current vs. Collector-emitter Voltage

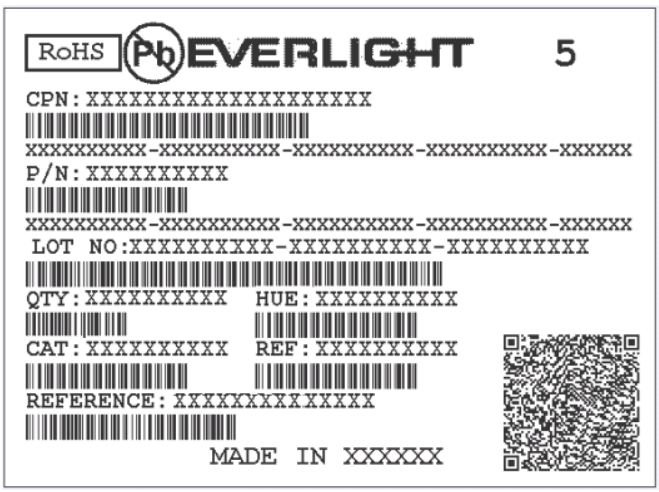


Package Dimension



Note: Tolerances unless dimensions ±0.25mm

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

Packing Quantity Specification

1.150PCS/1Bag,5Bags/1Box
2.10Boxes/1Carton

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.
4. 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 the 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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