

ITR20002

Features

- Fast response time
- High analytic
- Cut-off visible wavelength $\lambda_p=840\text{nm}$
- 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 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°C)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C 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	°C
Storage Temperature		Tstg	-40~+85	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	°C

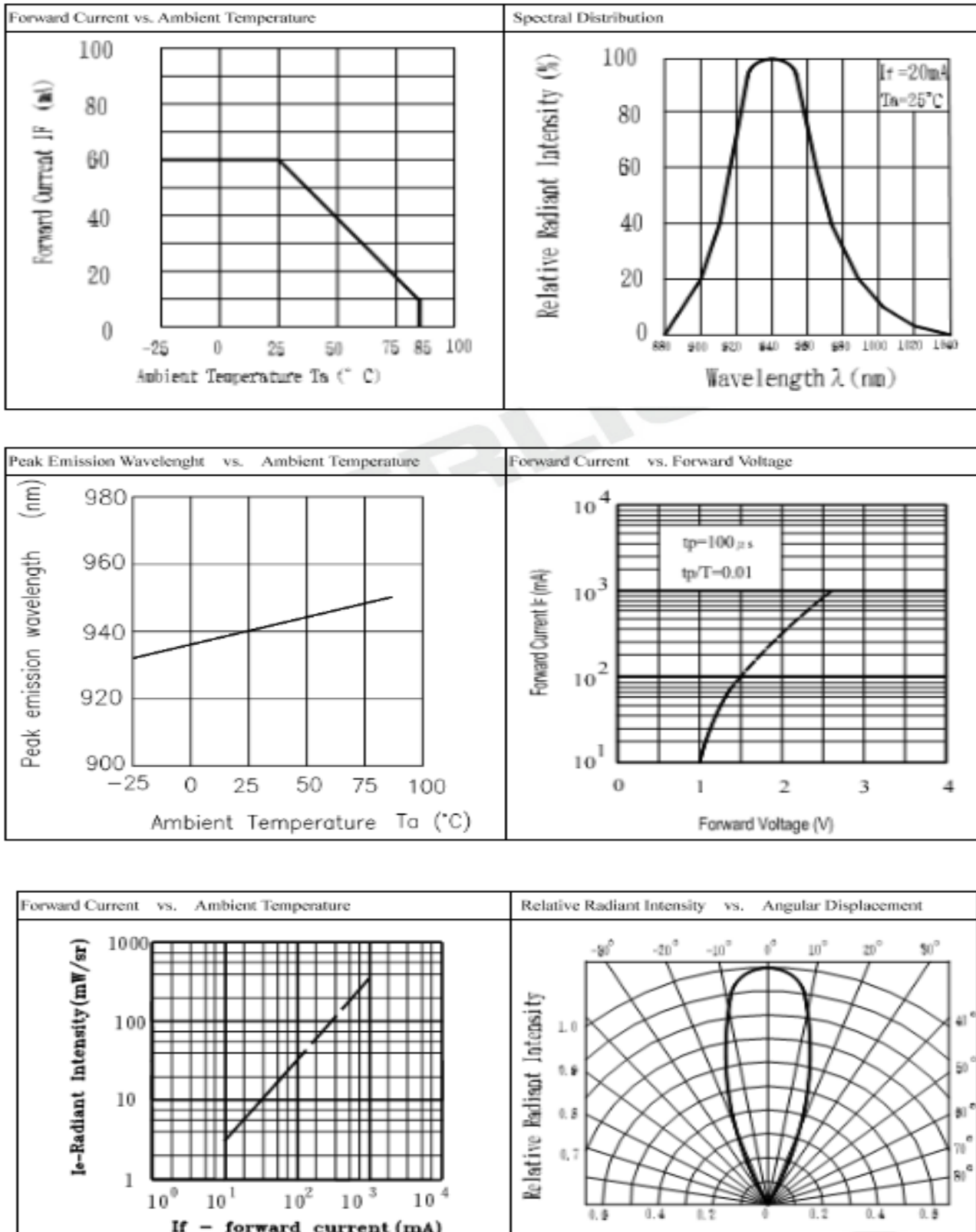
(*1) $t_w=100 \mu\text{sec.}$, $T=10 \text{ msec.}$ (*2) $t=5 \text{ Sec}$

Electro-Optical Characteristics (Ta=25°C)

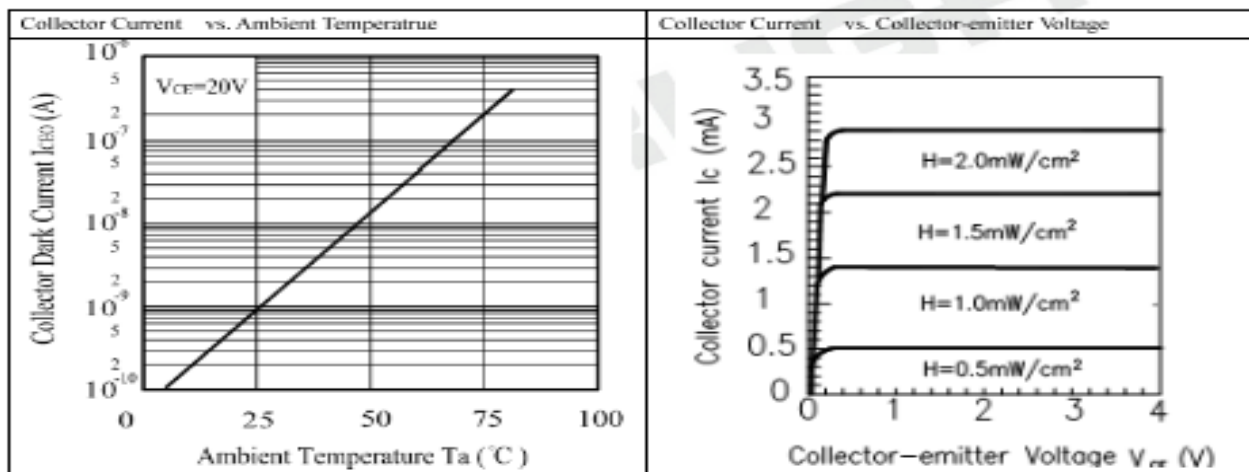
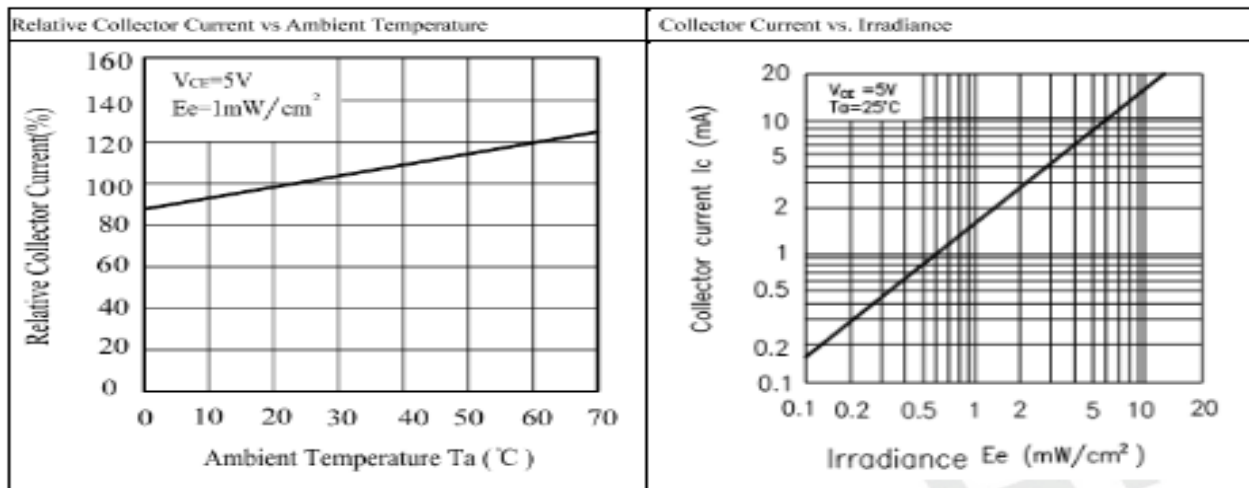
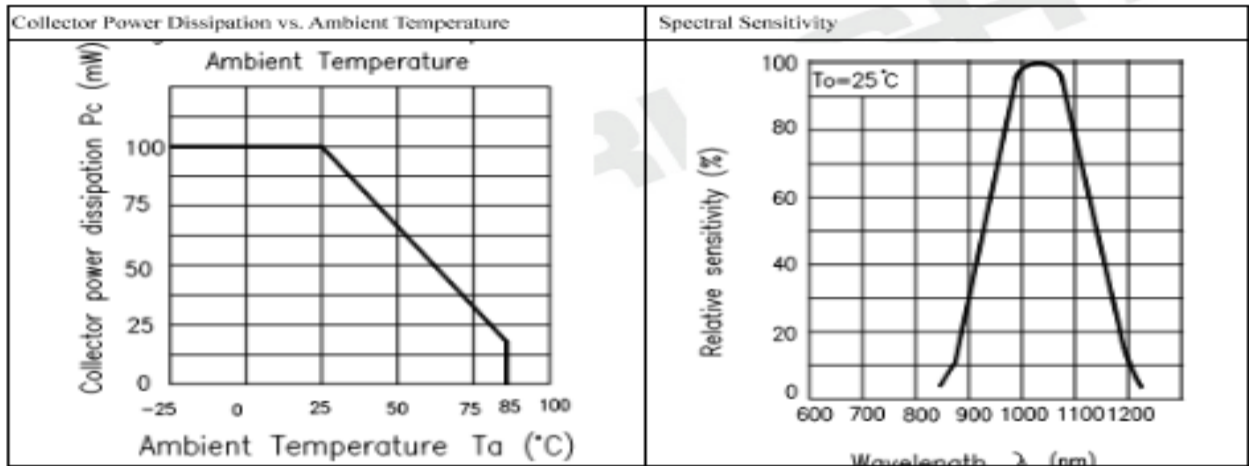
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F		1.2	1.5	V	$I_F=20\text{mA}$
	Reverse Current	I_R	---	---	10	μA	$V_R=5\text{V}$
	Peak Wavelength	λ_P	---	940	---	nm	$I_F=20\text{mA}$
Output	Dark C urrent	I_{CEO}	---	---	100	nA	$V_{CE}=20\text{V}, E_e=0\text{mW}/\text{cm}^2$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

$I_C(\text{on})$ at the testing condition—with reflector in 5mm away

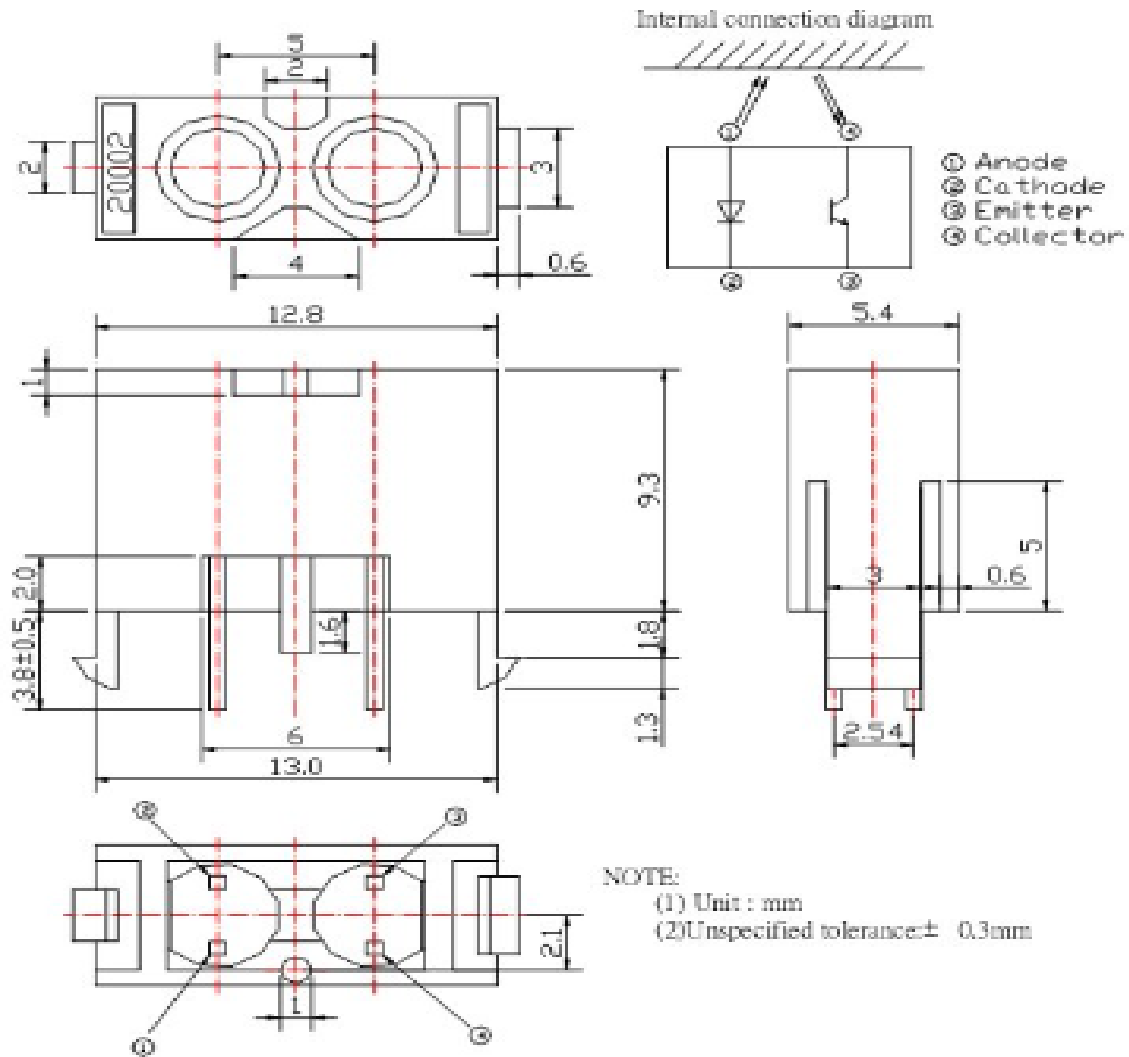
Typical Electrical/Optical/Characteristics Curves for IR



Typical Electrical/Optical/Characteristics Curves for PT

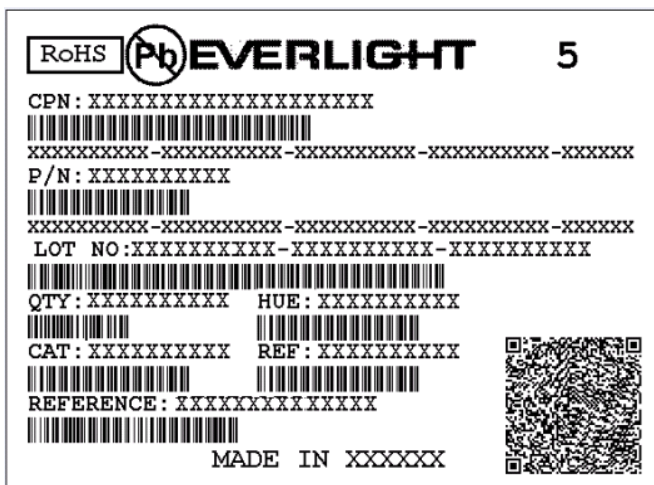


Package Dimension



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

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

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