

**EVERLIGHT****DATASHEET****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 <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	60	mA
	Peak Forward Current (*1) Pulse width ≤ 100μs, Duty cycle=1%	I <sub>FP</sub>	1	A
Output	Collector Power Dissipation	Pc	80	mW
	Collector Current	I <sub>C</sub>	20	mA
	Collector-Emitter Voltage	B V <sub>CEO</sub>	35	V
	Emitter-Collector Voltage	B V <sub>ECO</sub>	6	V
Operating Temperature		T <sub>opr</sub>	-25~+85	°C
Storage Temperature		T <sub>stg</sub>	-40~+85	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		T <sub>sol</sub>	260	°C

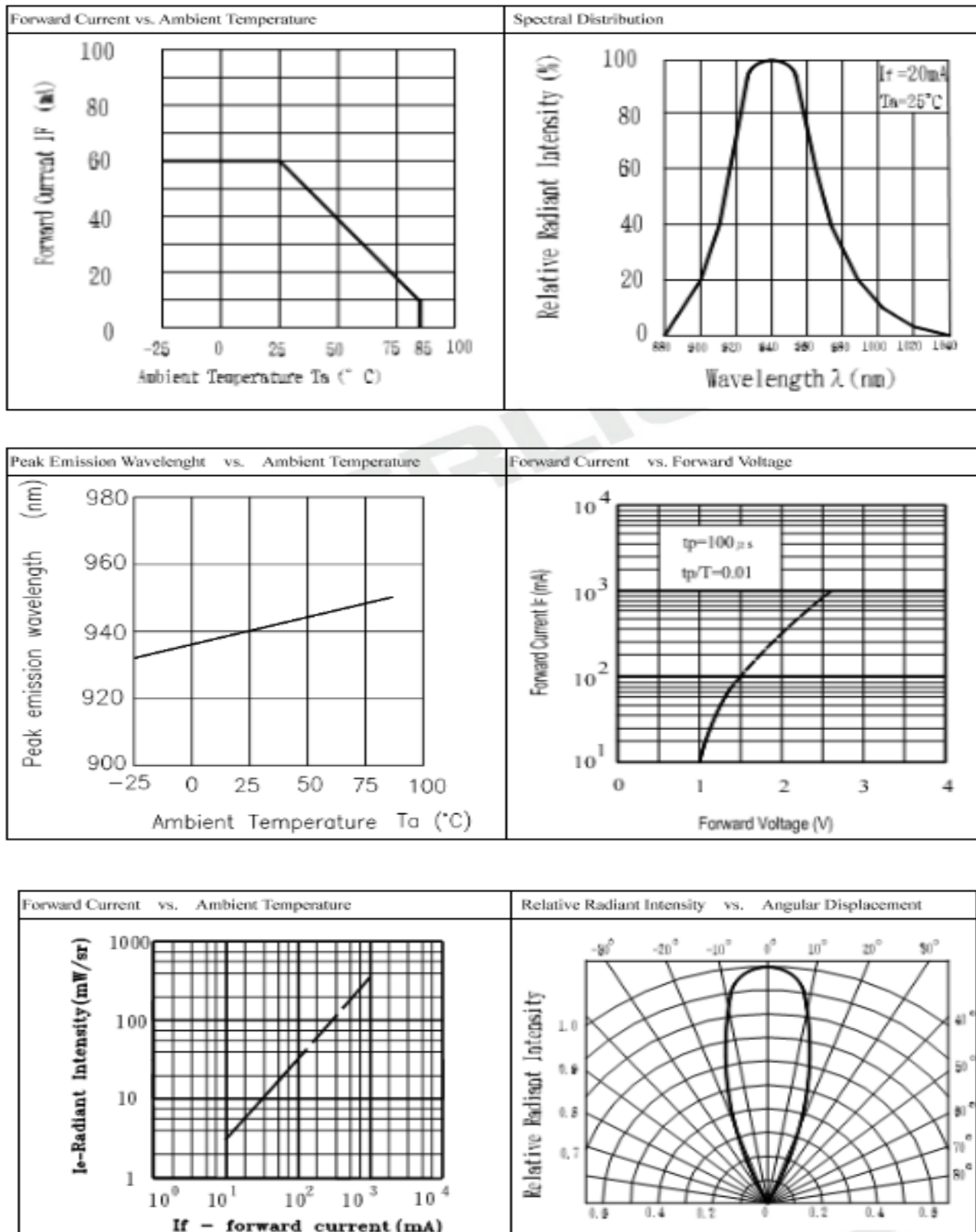
(\*1)  $t_w=100\ \mu\text{sec.}$ ,  $T=10\ \text{msec.}$       (\*2)  $t=5\ \text{Sec}$

### Electro-Optical Characteristics (Ta=25°C)

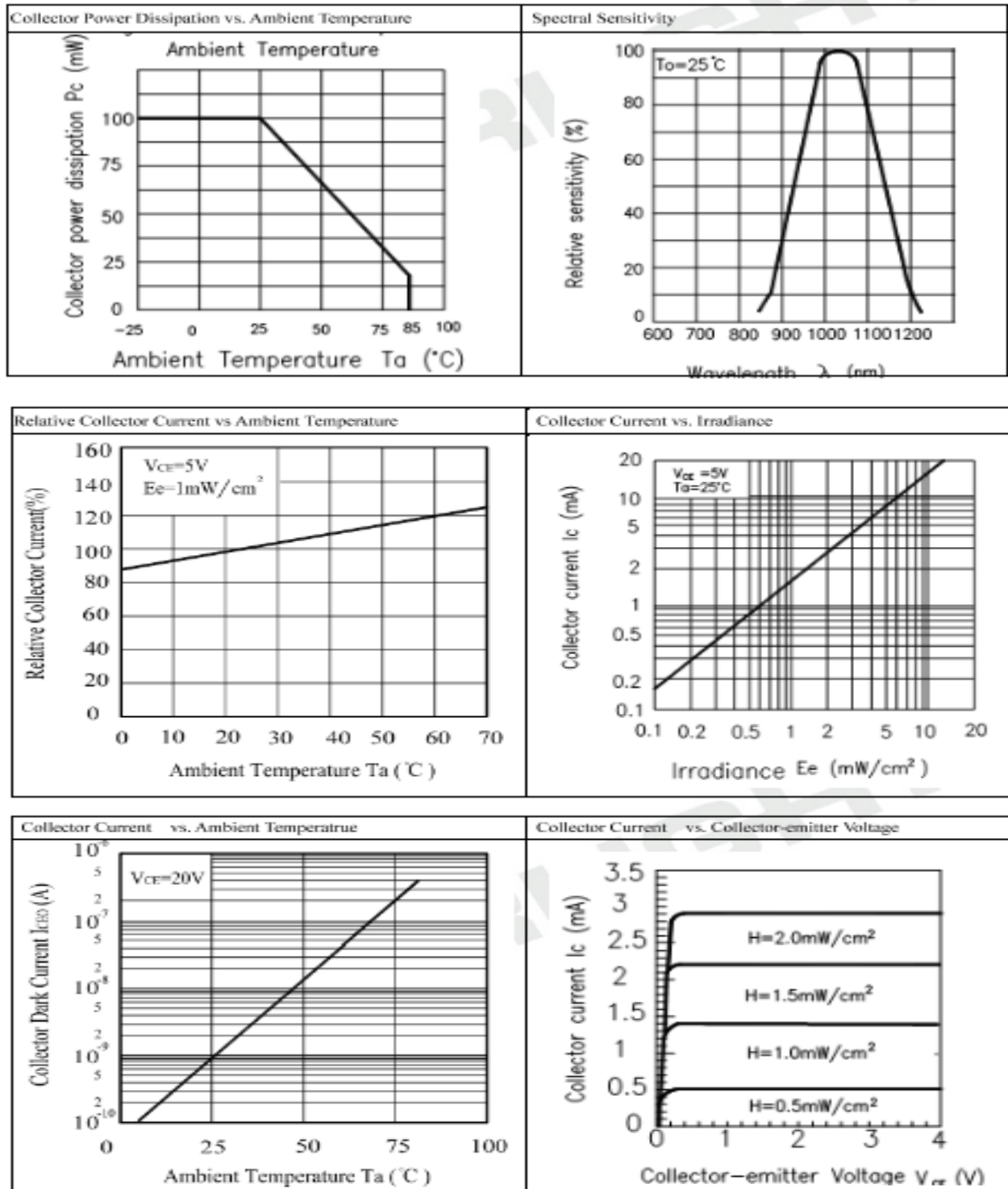
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	$V_F$		1.2	1.5	V	$I_F=20\text{mA}$
	Reverse Current	$I_R$	---	---	10	$\mu\text{A}$	$V_R=5\text{V}$
	Peak Wavelength	$\lambda_P$	---	940	---	nm	$I_F=20\text{mA}$
Output	Dark C urrent	$I_{CEO}$	---	---	100	nA	$V_{CE}=20\text{V}, E_e=0\text{mW/cm}^2$
	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	---	$\mu\text{sec}$	$V_{CE}=2\text{V}, I_C=100\mu\text{A}$ $R_L=100\Omega$
	Fall time	$t_f$	---	25	---	$\mu\text{sec}$	

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

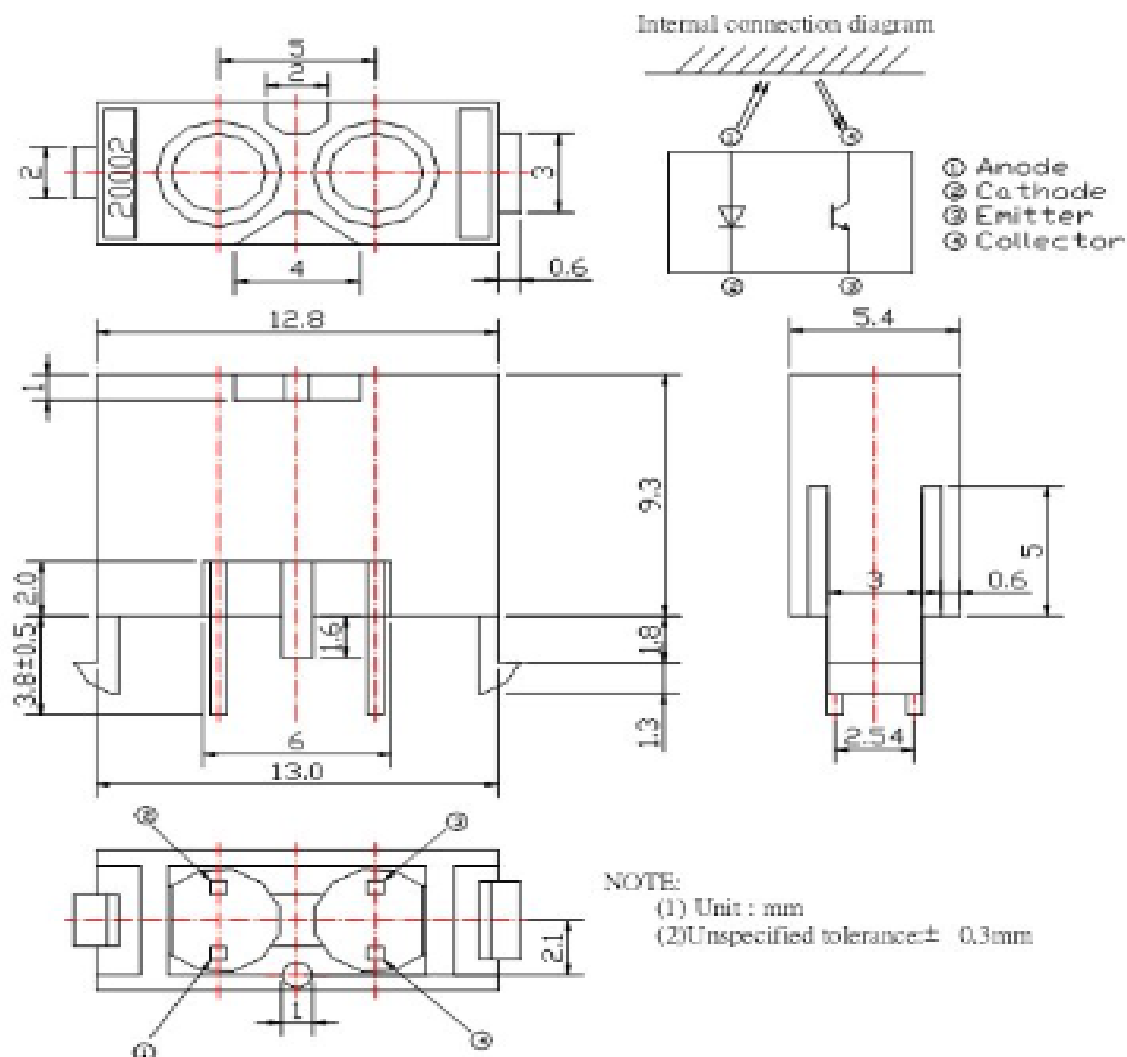
## Typical Electrical/Optical/Characteristics Curves for IR



# Typical Electrical/Optical/Characteristics Curves for PT



## Package Dimension



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

## Label Form Specification

RoHS	Ph	EVERLIGHT	5
CPN: XXXXXXXXXXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
P/N: XXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
LOT NO:XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
QTY: XXXXXXXXXXXX HUE: XXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
REFERENCE: XXXXXXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
MADE IN XXXXXX			

- 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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