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DATA SHEET

PART NO.: ITR2012002

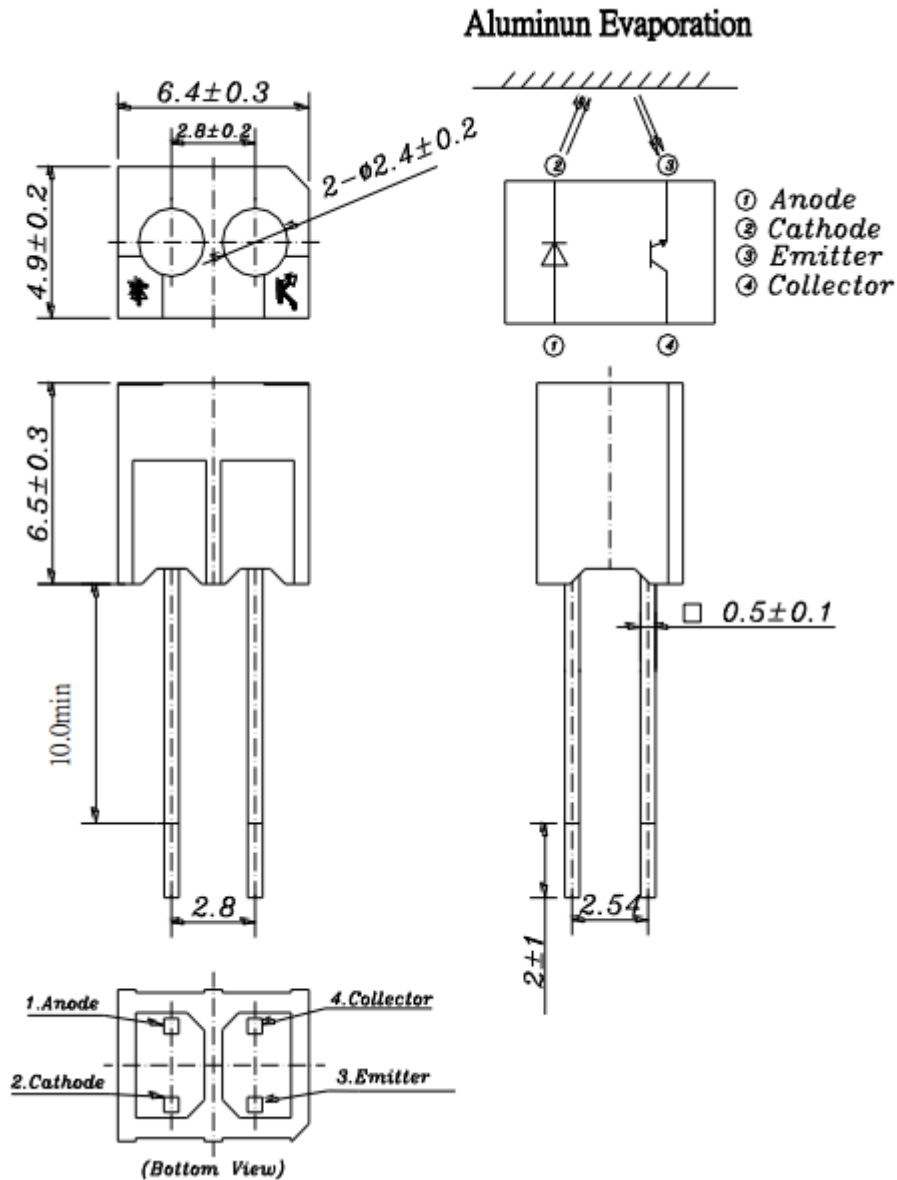
REV: A / 0

CUSTOMER'S APPROVAL : _____ DCC : _____

DRAWING NO. : DS-31P-20-1221

DATE : 2020-12-21 PAGE

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

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

Description

- The ITR2012002 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



OPTOELECTRONIC PHOTOELECTRIC SENSOR

Part No. : ITR2012002

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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) $t_w=100 \mu\text{sec.}$, $T=10 \text{ msec.}$ (*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 =20mA
	Reverse Current	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	---			

Note:

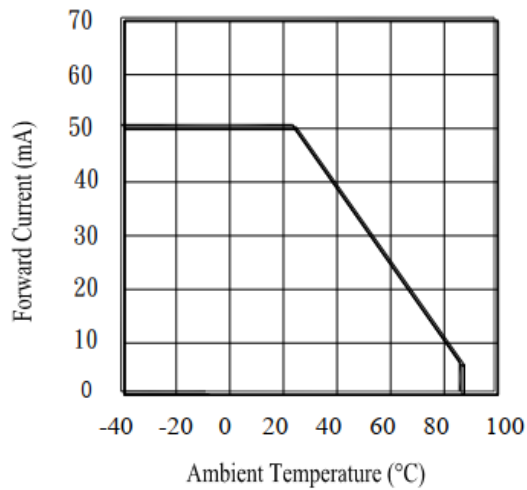
*Measurement Uncertainty of Forward Voltage: ±0.1V

*Measurement Uncertainty of Luminous Intensity: ±10%

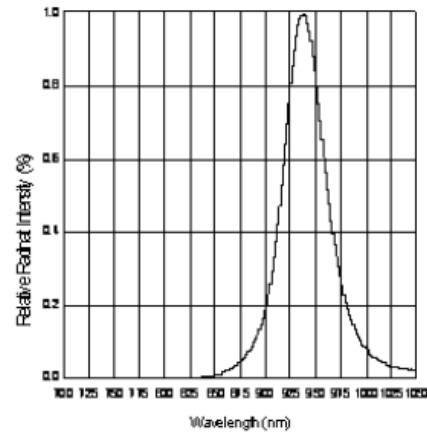
*Measurement Uncertainty of Dominant Wavelength ±1.0nm

Typical Electrical/Optical/Characteristics Curves for IR

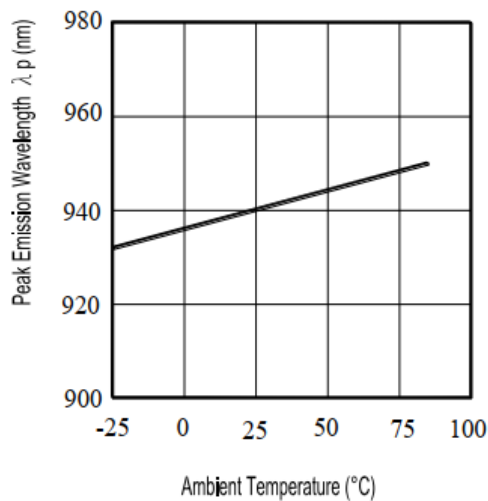
Forward Current vs. Ambient Temperature



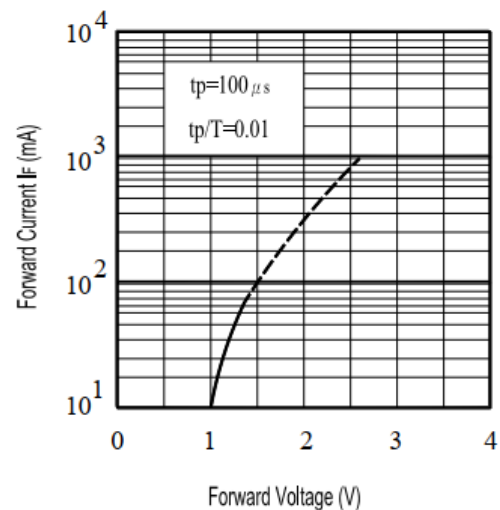
Spectral Sensitivity



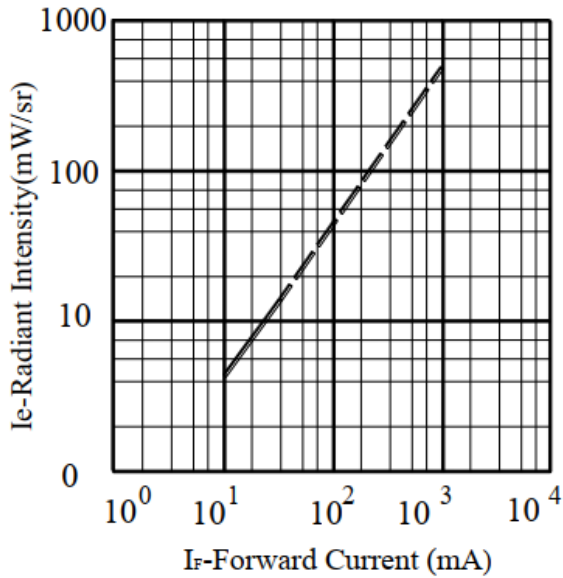
Peak Emission Wavelength vs. Ambient Temperature



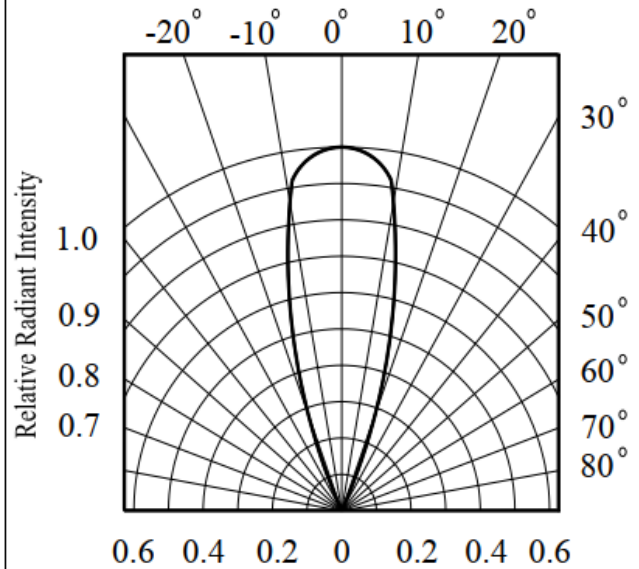
Forward Current vs. Forward Voltage



Radiant Intensity vs Forward Current

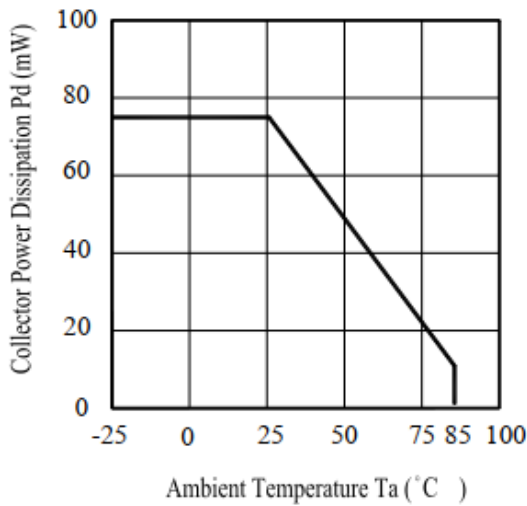


Relative Radiant Intensity vs Angular Displacement

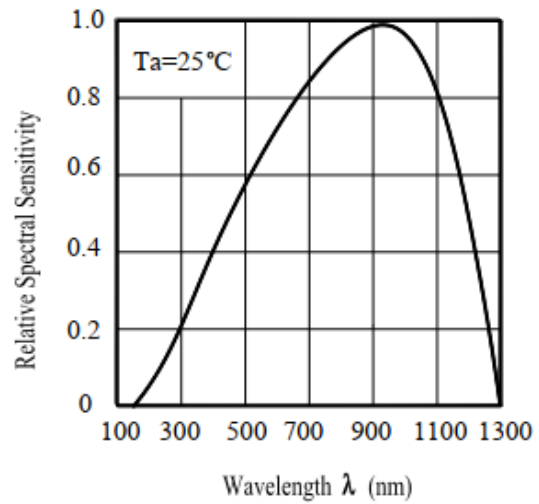


Typical Electrical/Optical/Characteristics Curves for PT

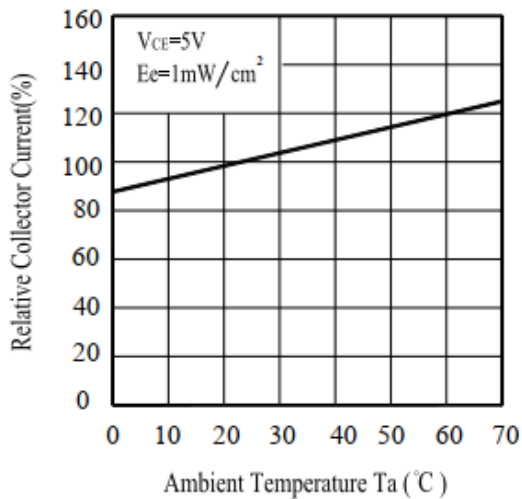
Collector Power Dissipation vs. Ambient Temperature



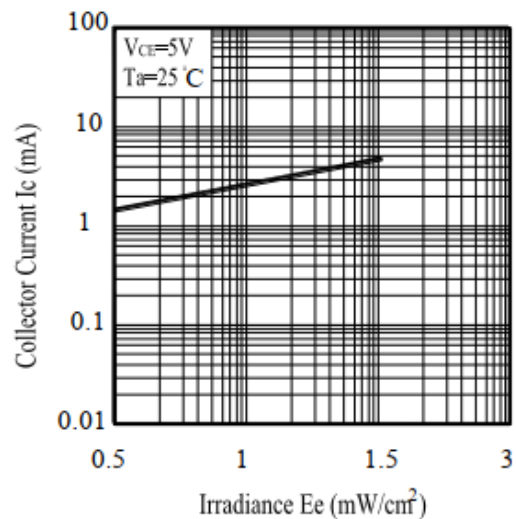
Spectral Sensitivity



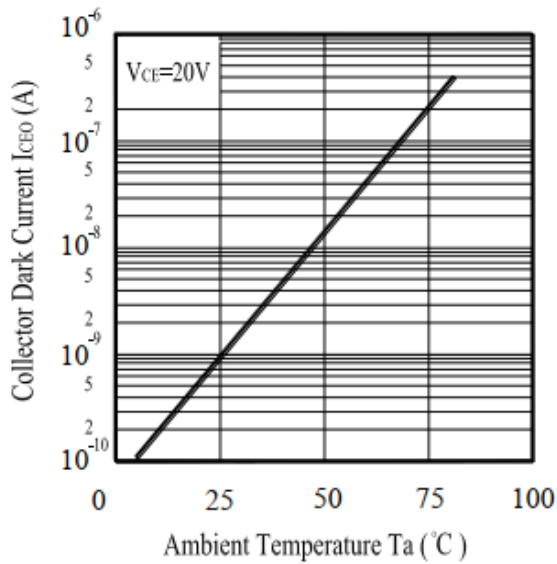
Relative Collector Current vs. Ambient Temperature



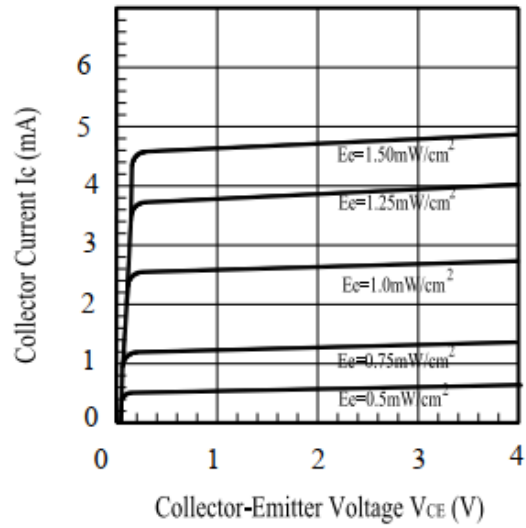
Collector Current vs. Irradiance



Collector Dark Current vs. Ambient Temperature



Collector Current vs. Collector-Emitter Voltage





OPTOELECTRONIC PHOTOELECTRIC SENSOR

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REV: A / 0

Packing Quantity Specification

- 1. 200PCS/1Bag, 6Bags/1Box
- 2. 10Boxes/1Carton

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2. The product meets PARALIGHT published specification for a period of twelve (12) months from date of shipment.
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