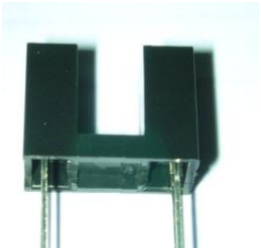
EVERLIGHT AMERICAS

DATASHEET

Technical Data Sheet
Opto Interrupter
EAITRDA1



Features

- Fast response time
- High analytic
- High sensitivity
- Cut-off visible wavelength λP=940nm
- Pb Free
- This product itself will remain within RoHS compliant version.

Description

The **EAITRDA1** 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 IRED only .This is the normal situation.
But when an object is in between , phototransistor could not receives the radiation.
For additional component information , please refer to IR928-6C-F and PT928-6C-F

Applications

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

Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR	GaAlAs	Water clear
PT	Silicon	Water clear

Absolute Maximum Ratings (Ta=25℃)

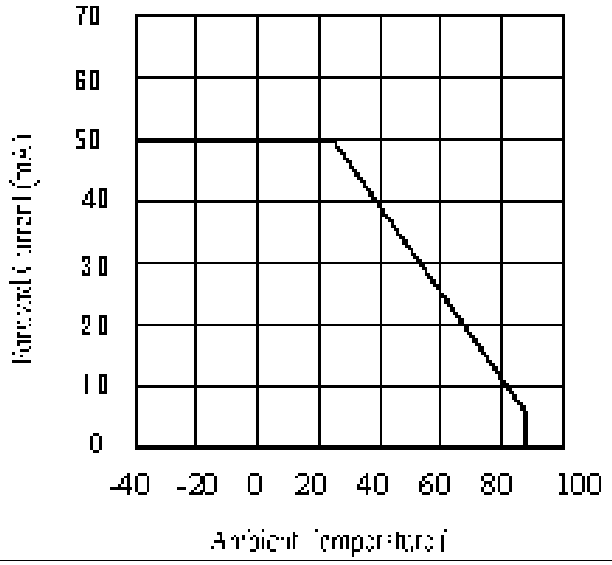
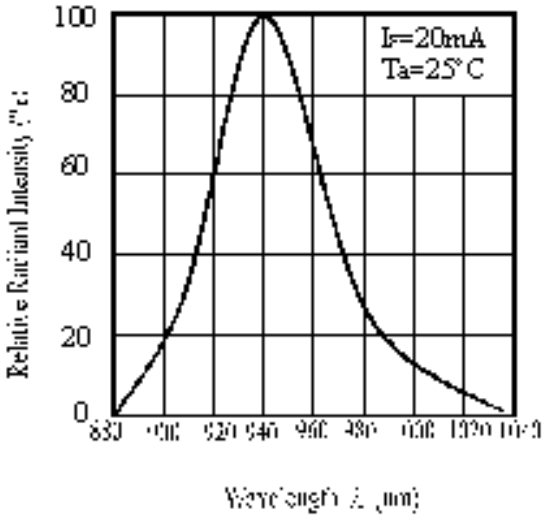
Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	75	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current (*1) Pulse width ≦100μs, Duty cycle=1%	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+85	℃
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	℃

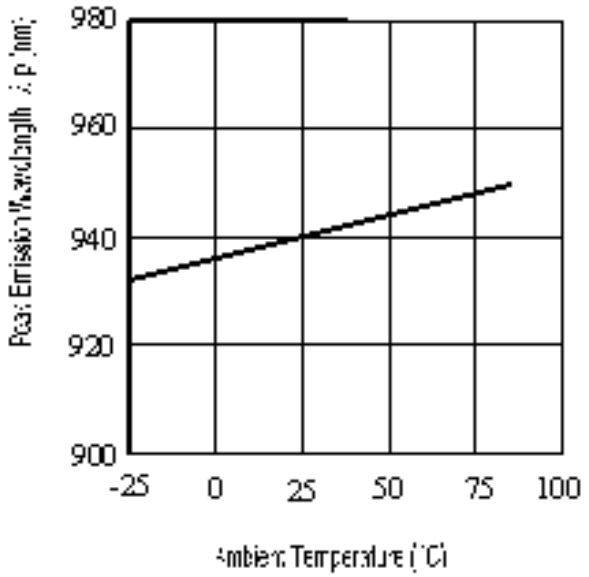
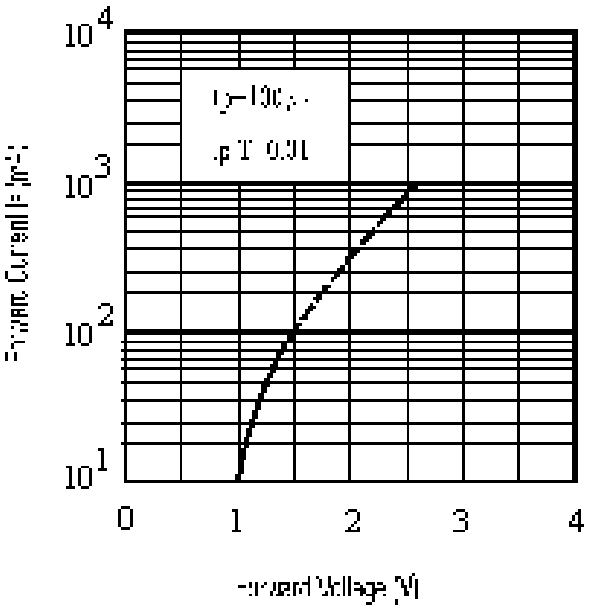
Notes: (＊1) tw=100 μsec. , T=10 msec. (＊2) t=5 Sec

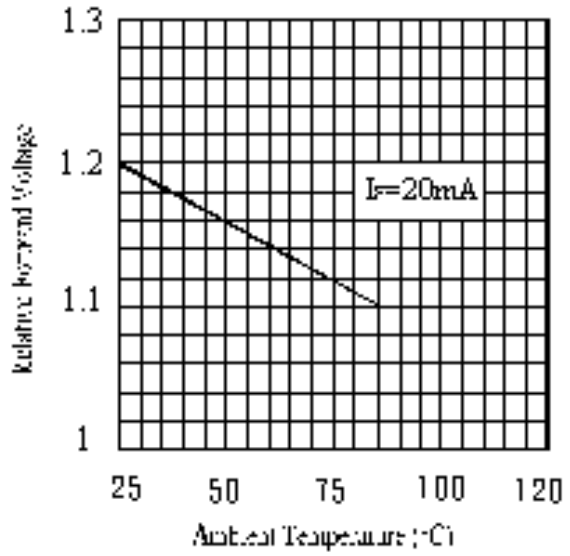
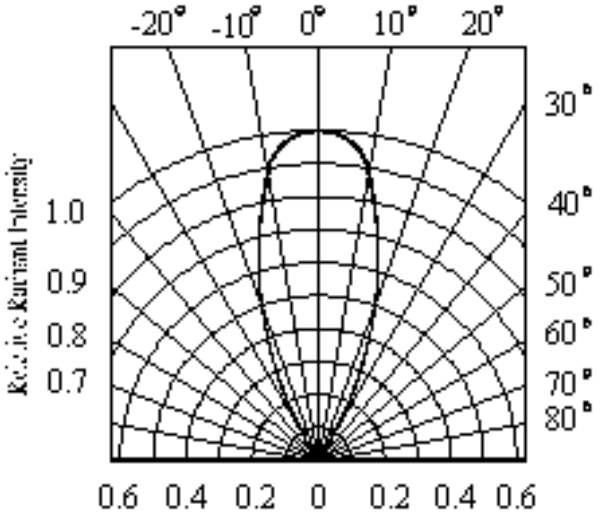
Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
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}=20V,Ee=0mW/cm^2
	C-E Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	I_C=2mA,Ee=1mW/cm
Collector Current(＊3)		$I_{C(ON)}$	0.5	-	-	mA	V_{CE}=5V,I_F=20mA
Response Time	Rise Time	t_R	-	15	-	μs	V_{CE}=5V I_C=1mA R_L=1KΩ
	Fall Time	t_F	-	15	-	μs	

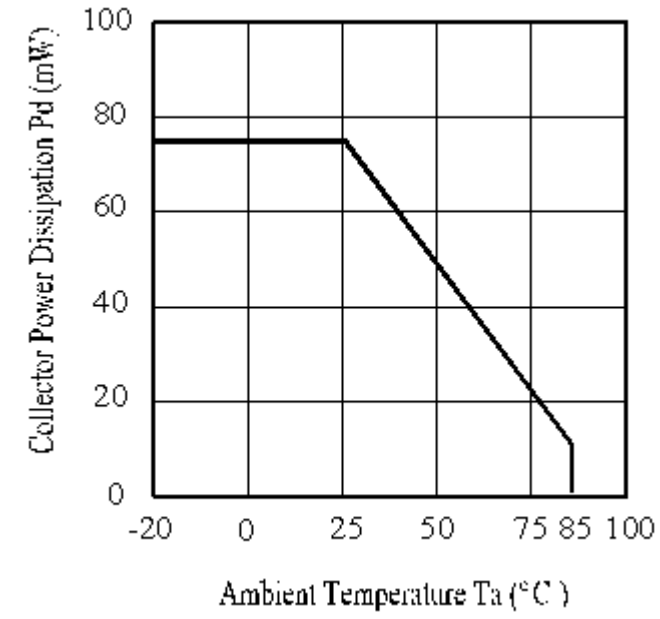
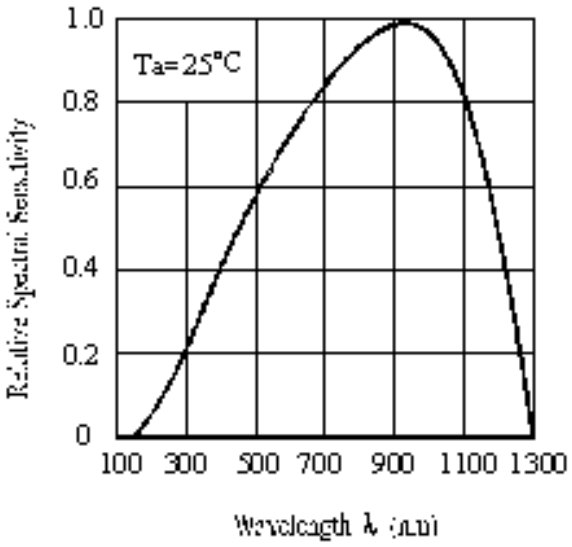
Typical Electrical/Optical/Characteristics Curves for IR

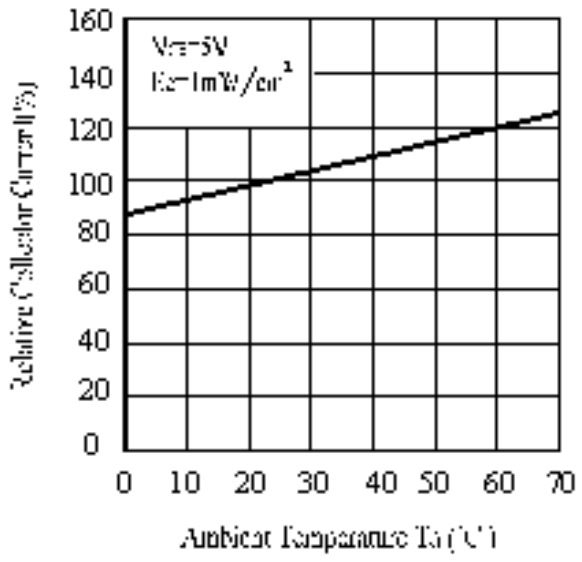
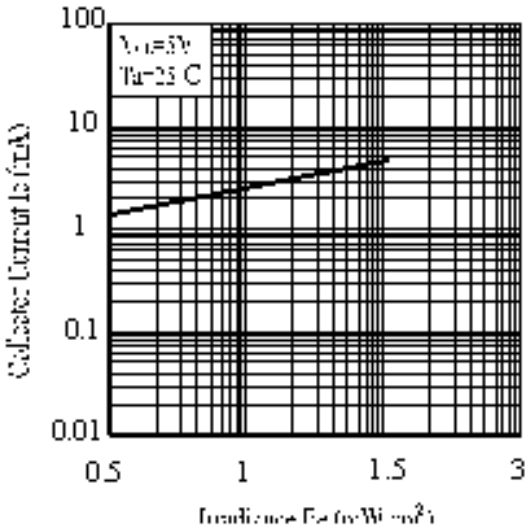
Forward Current vs. Ambient Temperature	Spectral Distribution
	

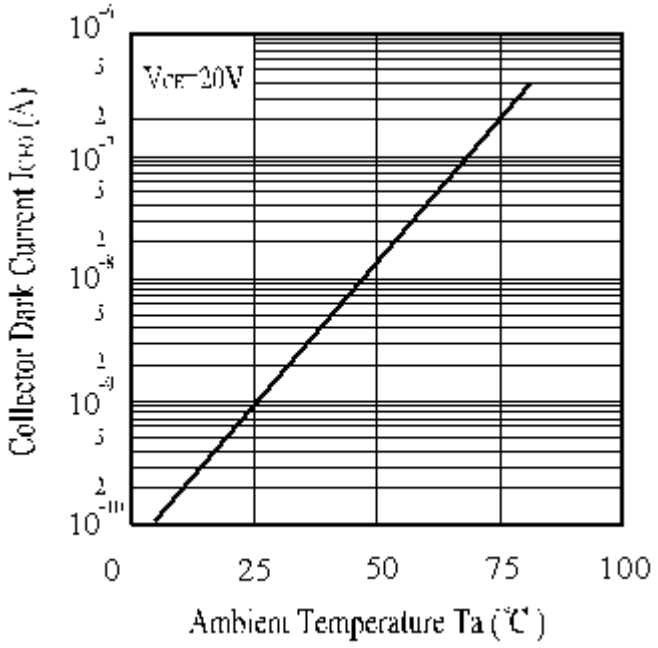
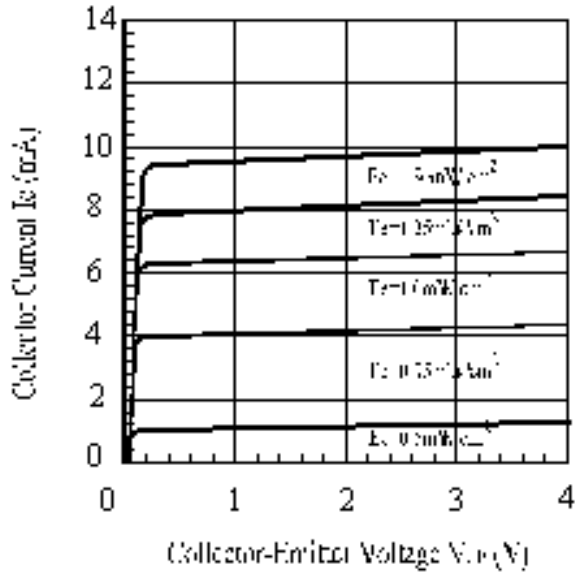
Peak Emission Wavelength vs. Ambient Temperature	Forward Current vs. Forward Voltage
	

Forward Current vs Ambient Temperature(˚C)	Relative Radiant Intensity vs. Angular Displacement
	

Typical Electro/Optical/Characteristics Curves for PT

Collector Power Dissipation vs. Ambient Temperature	Spectral Distribution
	

Relative Collector Current vs. Ambient Temperature	Collector Current vs. Irradiance
	

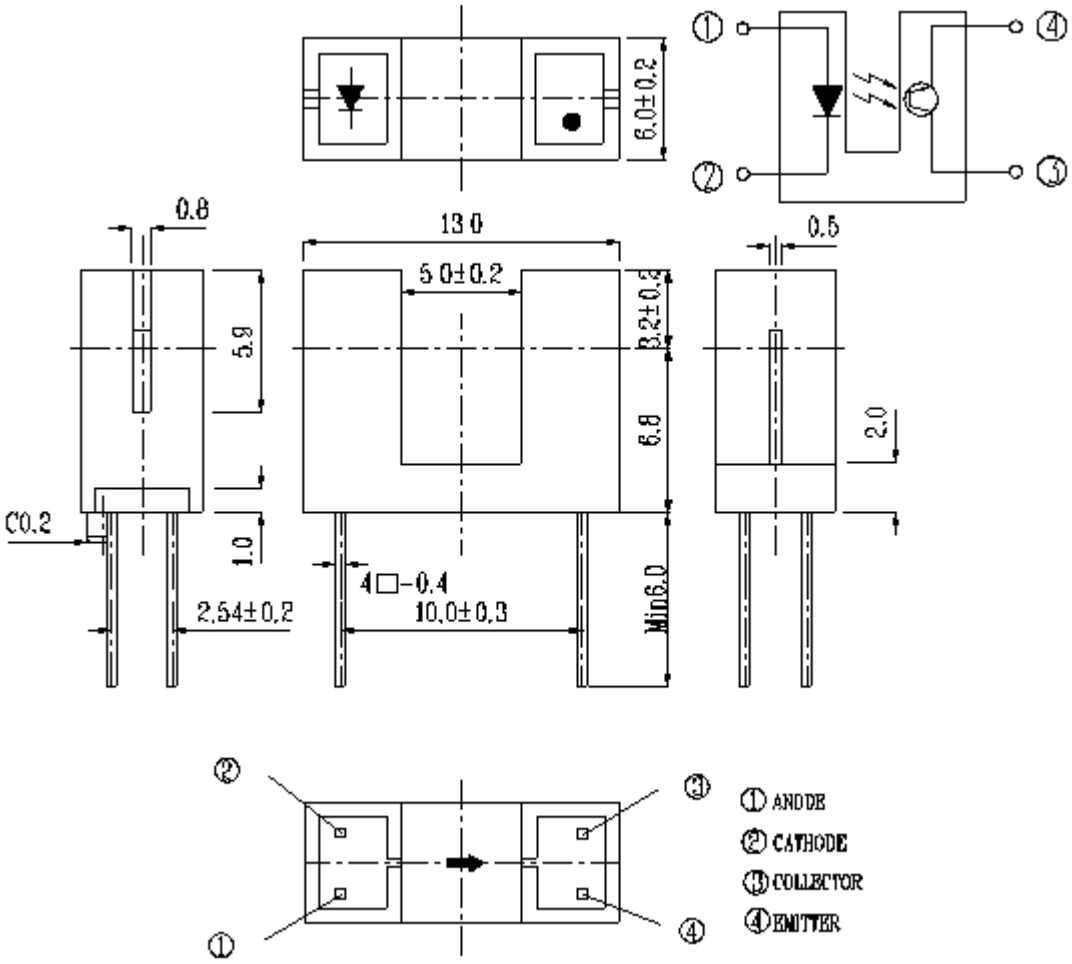
Collector Dark Current vs. Ambient Temperature	Collector Current vs. Collector-Emitter Voltage
	

Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD：10%

NO.	Item	Test Condition	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	**Solder Heat**	TEMP : 260℃ ± 5 ℃	10 sec	22 PCs		0/1
2	**Temperature Cycle**	H : +100℃ 15 mins 5 min L : -40℃ 15 min	300 cycle	22 PCs	Ic(on)≦L×0.8	0/1
3	**Thermal Shock**	H : +100℃ 5 min 10 sec L : -10℃ 5 min	300 cycle	22 PCs	L :Lower specification limit	0/1
4	**High Temperature Storage**	TEMP. : +100℃	1000 hrs	22 PCs		0/1
5	**Low Temperature Storage**	TEMP. : -40℃	1000 hrs	22 PCs		0/1
6	**DC Operating Life**	V_{CE}=5V I_F=20mA	1000 hrs	22 PCs		0/1
7	**High Temperature / High Humidity**	85℃ / 85% R.H.	1000 hrs	22 PCs		0/1

Package Dimension



Notes:

1.All dimensions are in millimeters

2.Tolerances unless dimensions ±0.2mm

3.Lead spacing is measured where the lead emerge from the package

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

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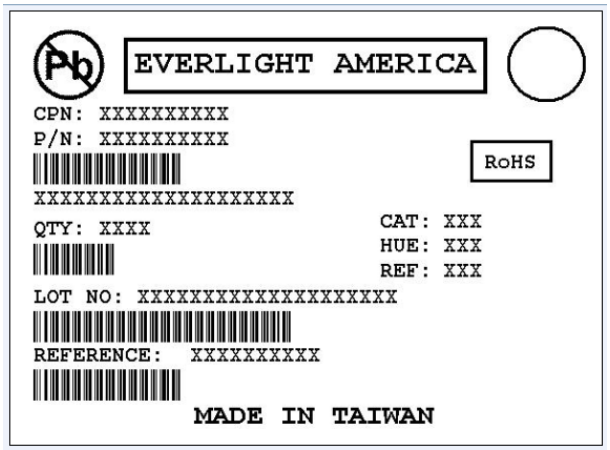
6.When using this product , please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERIGHT Americas assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.

Packing Quantity Specification

1. 38pcs/Tube, 100 Tubes/Box
2. 4 boxes/Chect

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

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