



EVERLIGHT ELECTRONICS CO., LTD.

DATA SHEET

MODEL NO : ITR9907

DATE : Dec, 22, 2000

DEPARTMENT : R&D 2

REVISION : 1.0

RECEIVED			
<input checked="" type="checkbox"/> MASS PRODUCTION			
<input type="checkbox"/> PRELIMINARY			
<input type="checkbox"/> CUSTOMER DESIGN			
DEVICE NUMBER : DRX-907-112			
PAGE :7			
CUSTOMER	DESIGNER	CHECKER	APPROVER

REV	DESCRIPTION	RELEASE DATE

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<http://www.everlight.com>





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Reflective Interrupter

MODEL NO : _____ ITR9907 _____

■ Features :

- Fast response time
- High analytic
- Cut-off visible wavelength $\lambda_p=980\text{nm}$
- High sensitivity
- Small package
- Pb free

■ Description :

The **ITR9907** consists of an infrared emitting diode and a silicon phototransistor, encased in a black Thermo-plastic housing. The advantage of the device is the small package. phototransistor receives radiation from the IRED only, and avoids the noise from ambient light.

■ Applications :

- Camera
- Copier
- Scanner
- Non-contact Switching
- For Direct PC Board

PART NO.	CHIP	LENS COLOR
	MATERIAL	
IR	GaAlAs	Clear
PT	Silicon	Black



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Reflective Interrupter

MODEL NO : _____ ITR9907

■ Absolute Maximum Ratings at T_A = 25°C

Parameter		Symbol	Rating	Unit
Input	Power Dissipation	P _D	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current(*1)	I _{FP}	1.0	A
Output	Collect Power Dissipation	P _C	75	mW
	Collect Current	I _C	20	mA
	Collector-Emitter Voltage	V _{CE}	30	V
	Emitter-Collector Voltage	V _{EC}	5	V
Operating Temperature		Topr	-25~+85	°C
Storage Temperature		Tstg	-40~+85	°C
Soldering Temperature(*2)		Tsol	260	°C

(*1) Pause width= 100 μs, Duty Cycle=1% (*2) t=5 secs

■ Electronic Optical Characteristics at T_A = 25°C:

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V _{F1}	-	1.2	1.6	V	I _F =20mA
	Reverse Current	I _R	-	-	10	μA	V _R =5V
	Peak Wavelength	λ _P	-	940	-	nm	---
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, I _B =0.1mA
Collect Current		I _{C(ON)A}	50	-	-	μA	V _{CE} =5V, I _F =5mA
Response Time	Rise Time	t _R	-	15	-	μs	V _{CE} =2V, I _C =1mA, R _L =1KΩ
	Fall Time	t _F	-	15	-	μs	



Reflective Interrupter

MODEL NO : ITR9907

■ Typical Electrical/Optical/Characteristics Curves For IR

Fig. 1 Forward Current vs. Ambient Temperature

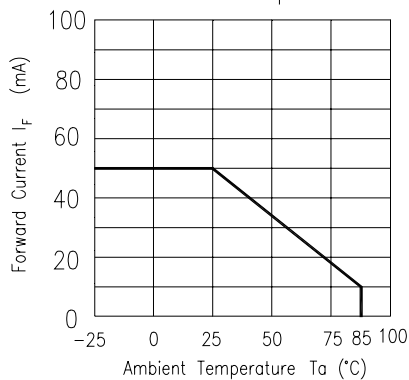


Fig. 2 Spectral Distribution

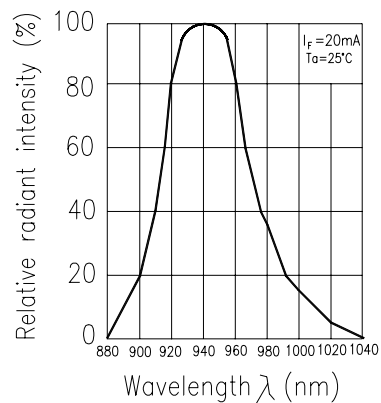


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

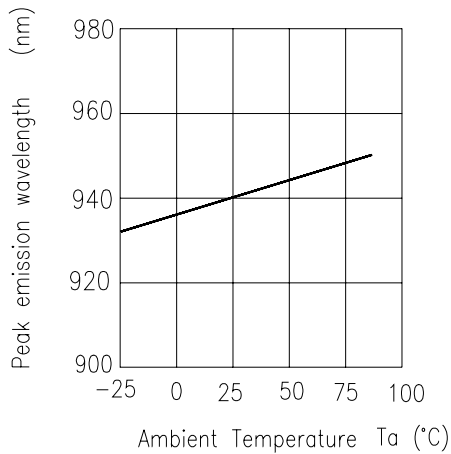


Fig. 4 Forward Current vs. Forward Voltage

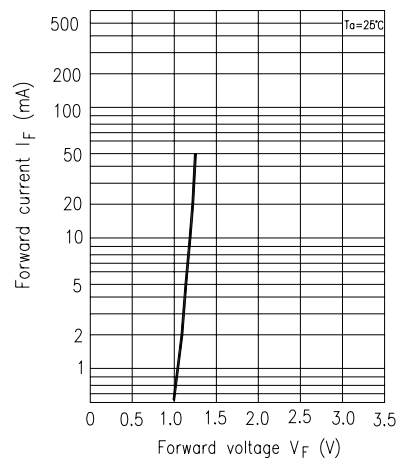
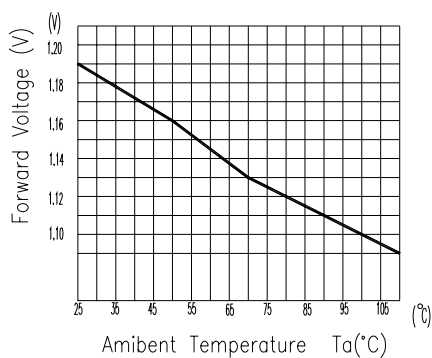


Fig. 5 Forward Voltage vs. Ambient Temperature





Reflective Interrupter

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Typical Electrical/Optical/Characteristics Curves For PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

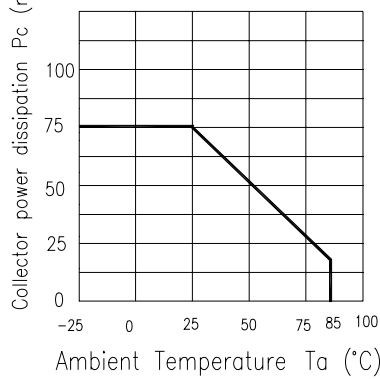


Fig.2 Collector Dark Current vs. Ambient Temperature

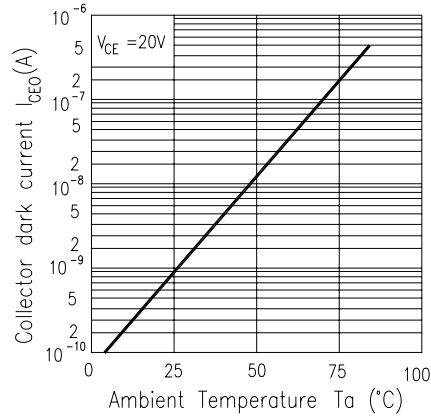


Fig. 3 Relative Collector Current vs. Ambient Temperature

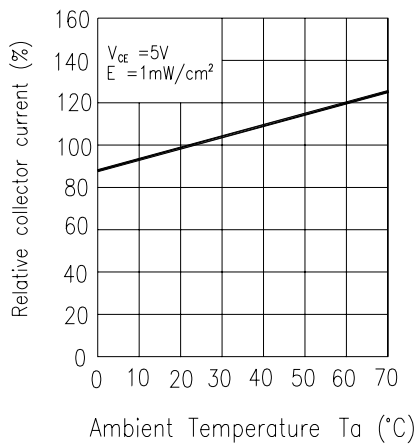


Fig.4 Collector Current vs. Irradiance

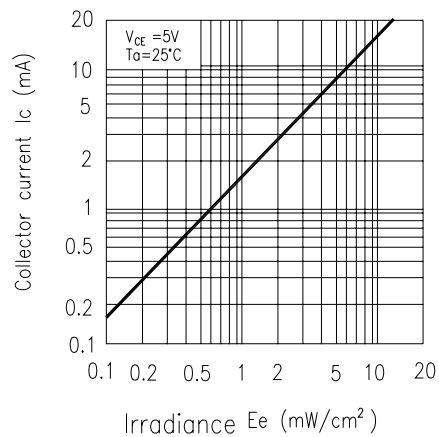


Fig.5 Spectral Sensitivity

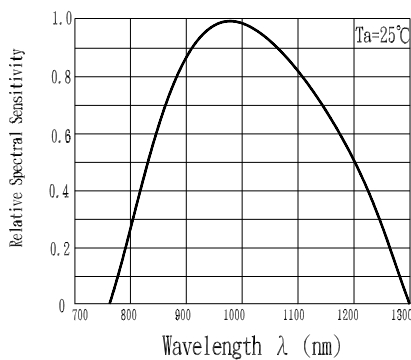
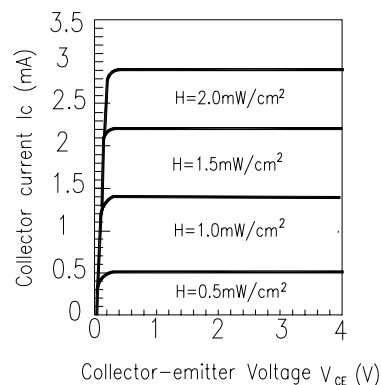


Fig.6 Collector Current vs. Collector-emitter Voltage



Wavelength λ (nm)



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Photointerrupter

MODEL NO : ITR9907

■ Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.

Confidence level:90%

LTPD:10%

NO.	Item	Test Conditions	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 sec	22 PCs	$I_{c(on)} \leq L \times 0.8$ L :Lower specification limit	0/1
2	Temperature Cycle	H : +85°C 30 min ↑ 5 min ↓ L : -55°C 30 min	50 cycle	22 PCs		0/1
3	Thermal Shock	H : +100°C 5 min ↑ 10 sec ↓ L : -10°C 30 min	50 cycle	22 PCs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 PCs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 hrs	22 PCs		0/1
6	DC Operating Life	$V_{CE}=5V$	1000 hrs	22 PCs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 PCs		0/1



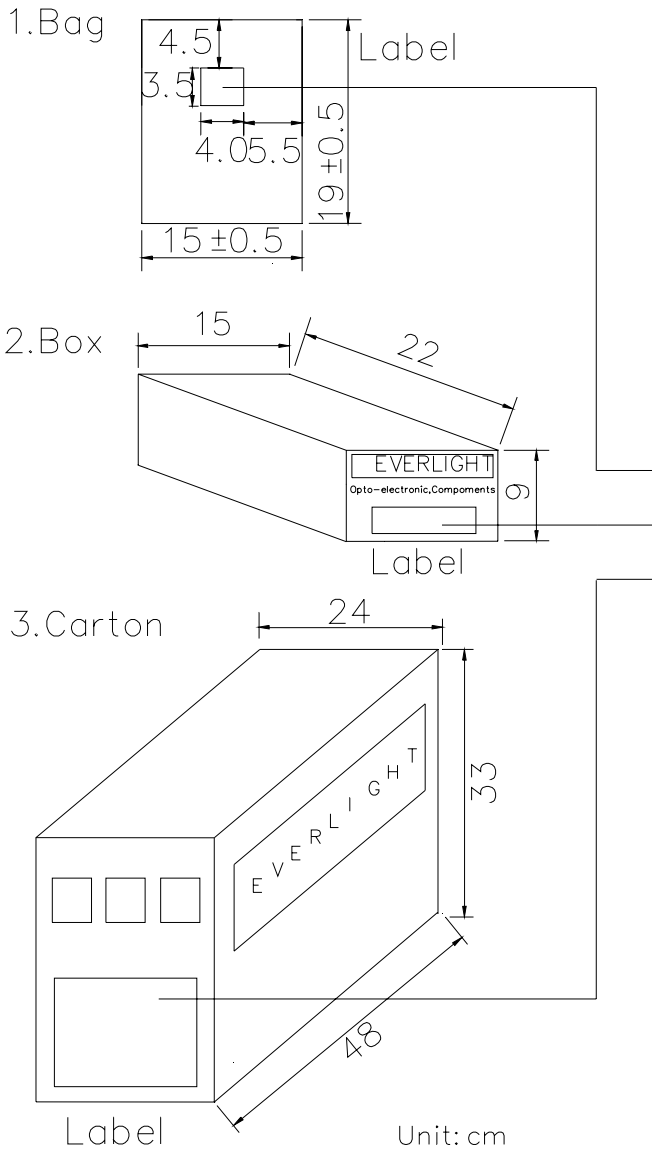
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Reflective Interrupter

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■ Packing Specifications



CPN:
P/N:



ITR9907

QTY:



CAT:
HUE:
REF:

LOT NO:

MADE IN TAIWAN

CPN : Customer's Production Number
P/N : Production Number
QTY : Packing Quantity
CAT : Ranks
HUE : Peak Wavelength
REF : Reference
LOT NO : Lot Number
MADE IN TAIWAN : Production place

■ Packing Quantity Specification

- 1.200Pcs/1Bag
- 2.6Bags/1Box
- 3.10Boxes/1Carton



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REV : 1.0

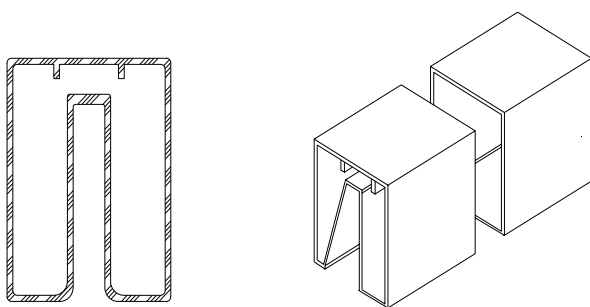
ECN : _____

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Opto Interrupter

MODEL NO : ITR8307/T18/F43

■ Packing Specifications



CPN:

P/N:



ITR9907

QTY:



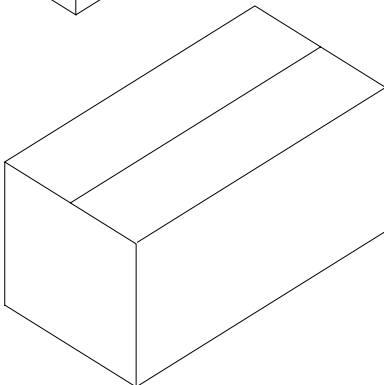
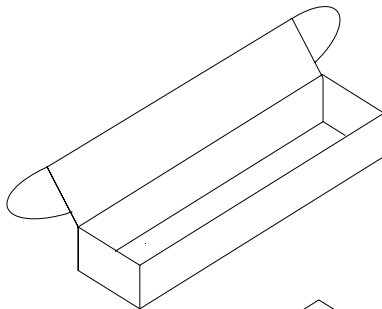
CAT:

HUE:

REF:

LOT NO:

MADE IN TAIWAN



CPN : Customer's Production Number

P/N : Production Number

QTY : Packing Quantity

CAT : Ranks

HUE : Peak Wavelength

REF : Reference

LOT NO : Lot Number

MADE IN TAIWAN : Production place

Unit:mm

■ Packing Quantity Specification

1.100pcs/1tube , 45tubes/1box

2.6boxes/1carton