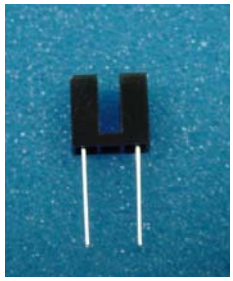
Technical Data Sheet
OPTO INTERRUPTER

ITR8105



Features

- Wide gap between light emitter and detector(2.6 mm)
- High sensing accuracy
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

The ITR8105 is a gallium arsenic infrared emitting diode which is coupled with a silicon photo transistor in a plastic housing. The packaging system is designed to optimizes the mechanical resolution, coupling efficiency, and insulates ambient light. The slot in the housing a provides a means of interrupting the signal with printer, scanner, copier, or other opaque material, switching the output from an ” ON” to” OFF” state.

Applications

- Copier
- Printer
- Facsimile
- Ticket vending machine
- Opto-electronic switch

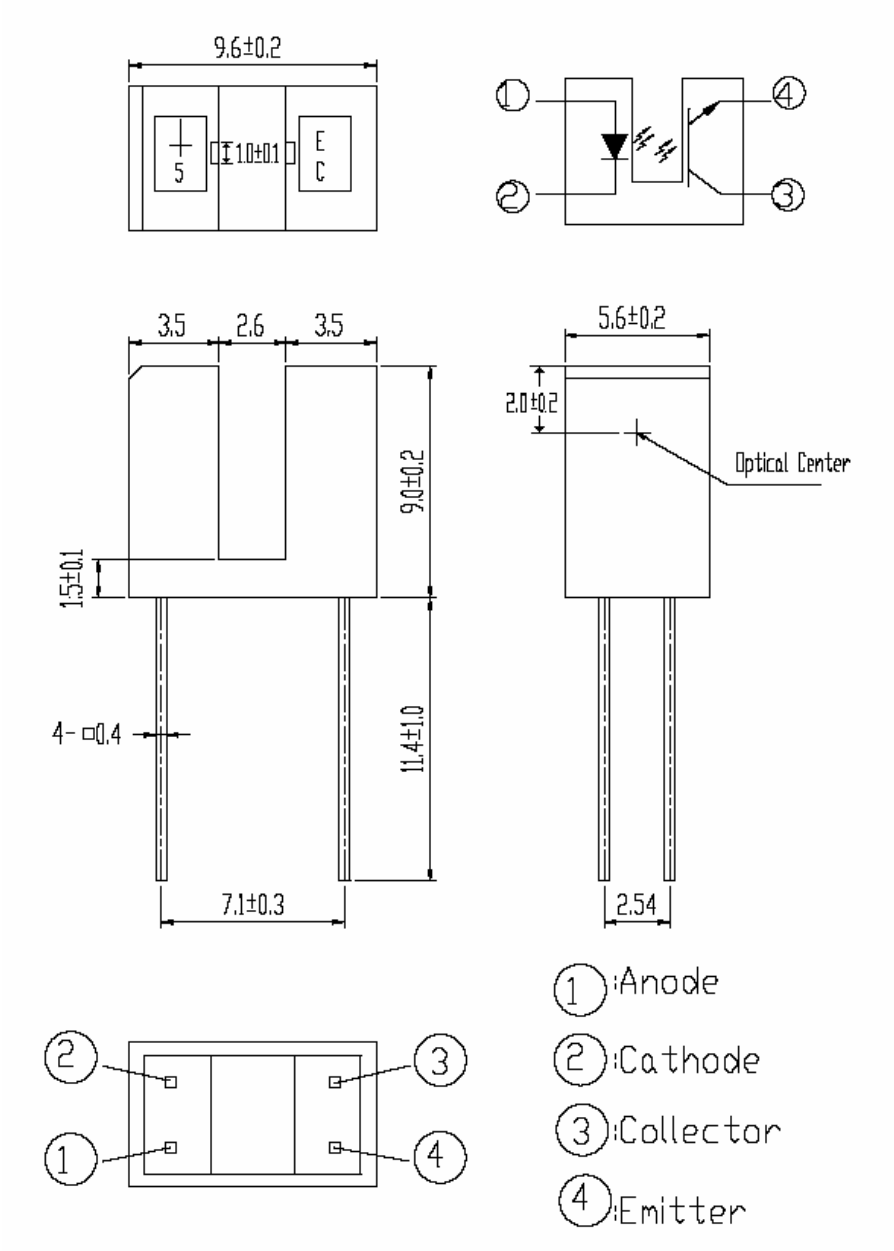
Device Selection Guide

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

Technical Data Sheet
OPTO INTERRUPTER

ITR8105

Package Dimensions



Notes: 1.All dimensions are in millimeters

2.The tolerance not marked is ±0.20 mm in the drawing.

Technical Data Sheet
OPTO INTERRUPTER

■Absolute Maximum Ratings (Ta=25℃) ITR8105

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 Pulse width ≦100 μs, Duty cycle=1%	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	ºC
Storage Temperature		Tstg	-40~+85	ºC
Lead Soldering Temperature (1/16 inch from body for 5 seconds)		Tsol	260	ºC

Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V_F	--	1.2	1.6	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}=10V
	C-E Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	I_C=0.5mA, I_F=20mA
Transfer Characteristics	Collector Current	$I_{C(ON)}$	1	4	15	mA	V_{CE}=5V,I_F=10mA
	Rise Time	t_R	-	20	-	μs	V_{CE}=5V,I_C=1 mA ,R_L=1 KΩ
	Fall Time	t_F	-	20	-	μs	

Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

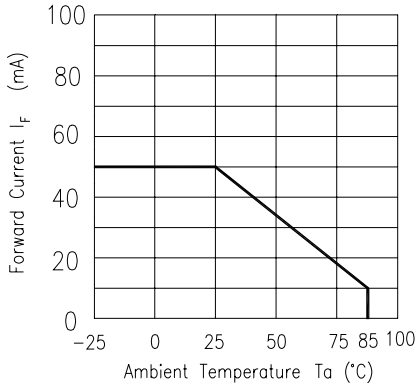


Fig. 2 Spectral Distribution

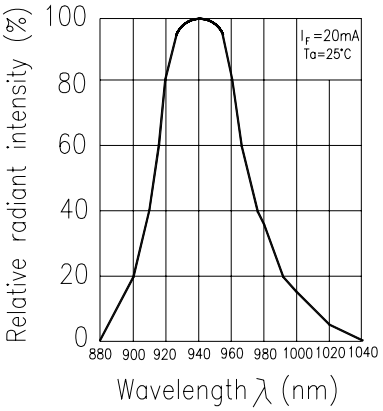


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

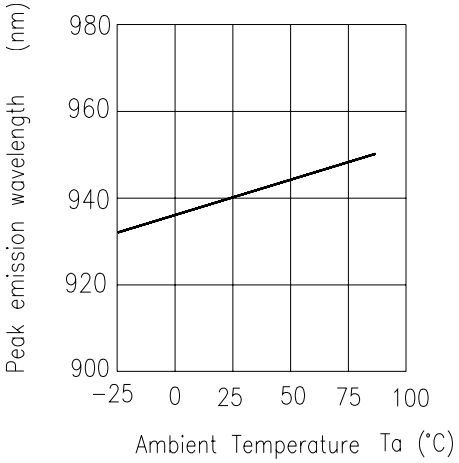


Fig. 4 Forward Current vs. Forward Voltage

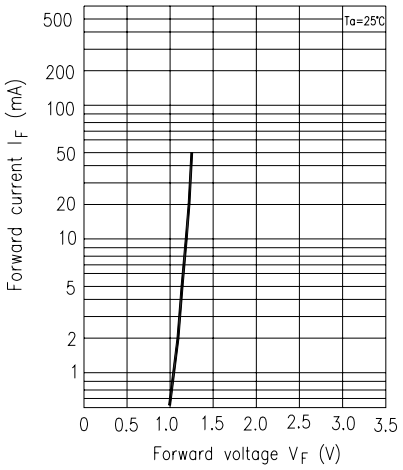


Fig. 5 Forward Voltage vs. Ambient Temperature

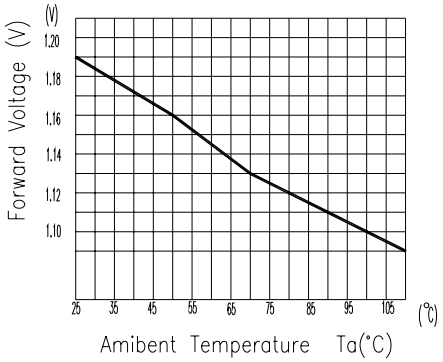
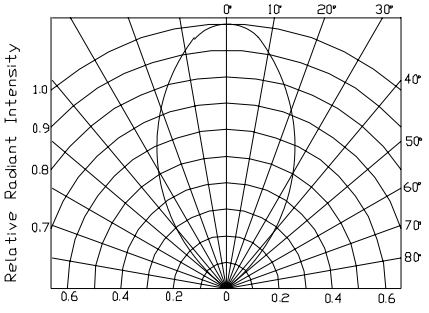


Fig. 6 Relative Radiant Intensity vs Angular Displacement



Technical Data Sheet
OPTO INTERRUPTER

Typical Electrical/Optical/Characteristics Curves for PT **ITR8105**

Fig.1 Collector Power Dissipation vs. Ambient Temperature

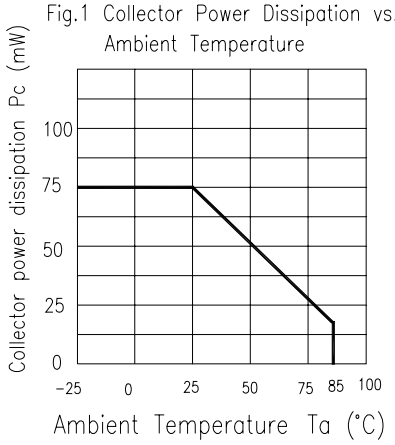


Fig.2 Collector Dark Current vs. Ambient Temperature

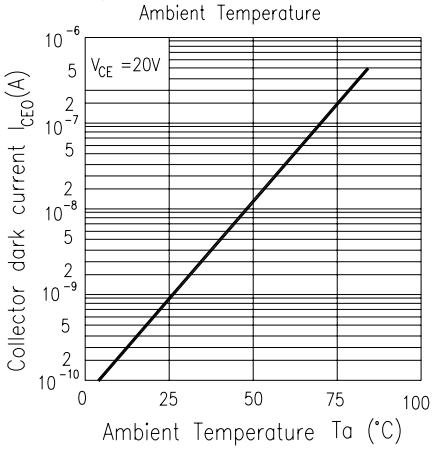


Fig.3 Spectral Sensitivity

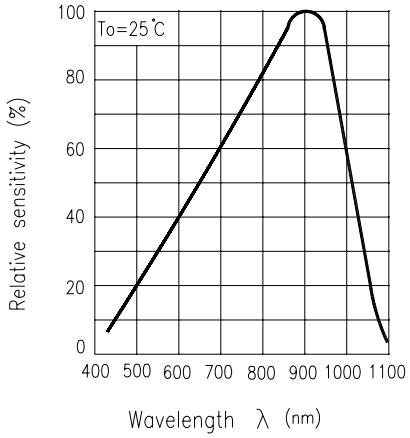
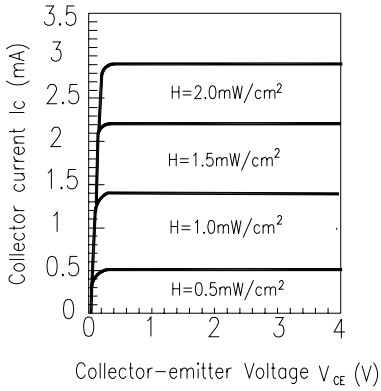


Fig.4 Collector Current vs. Collector-emitter Voltage



Typical Electro-Optical Characteristics Curves

Fig.1 Relative Collector Current vs. Shield Distance(1)

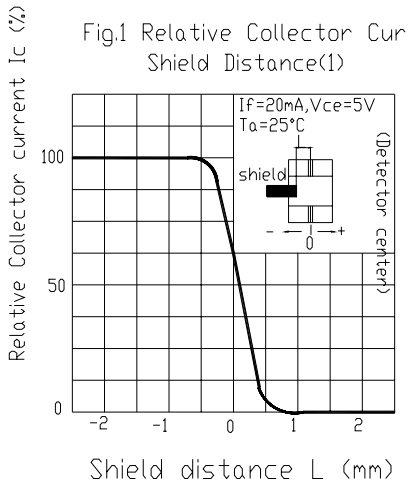
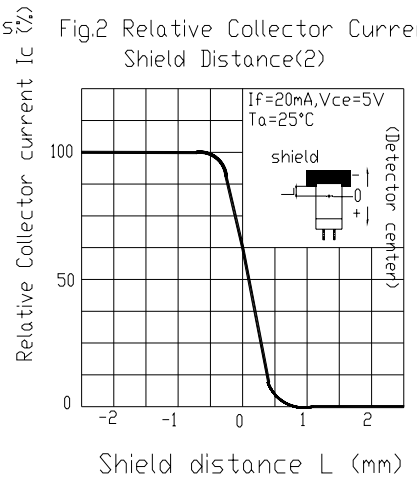


Fig.2 Relative Collector Current vs. Shield Distance(2)



Technical Data Sheet
OPTO INTERRUPTER

ITR8105

Reliability Test Item And Condition

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

Confidence level：90%、LTPD：10%

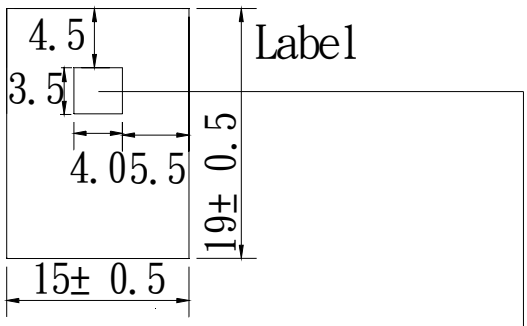
NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	Solder Resistance	Ta = 260 ±3°C	10 ± 1 sec	22pcs	$V_F \geqq U \times 1.2$ $I_{C(ON)} \leqq L \times 0.8$ U：Upper Specification Limit L：Lower Specification Limit	0/1
2	Temperature Cycle	H：+85℃ 15mins ↕ 5mins L：-55℃ 15mins	50Cycles	22pcs		0/1
3	Thermal Shock	H：+85℃ 5mins ↕ 10secs L：-55℃ 5mins	50Cycles	22pcs		0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-55℃	1000hrs	22pcs		0/1
6	DC Operating Life	V_{CE}=5V	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85℃ / 85% R.H	1000hrs	22pcs		0/1

Technical Data Sheet
OPTO INTERRUPTER

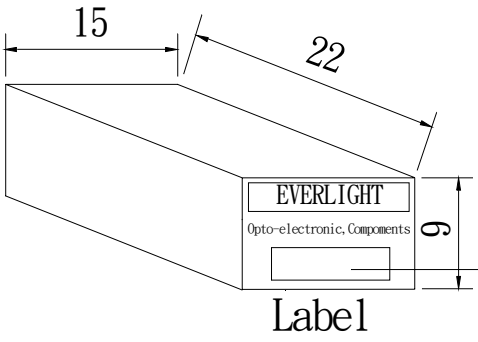
ITR8105

■Packing Specifications

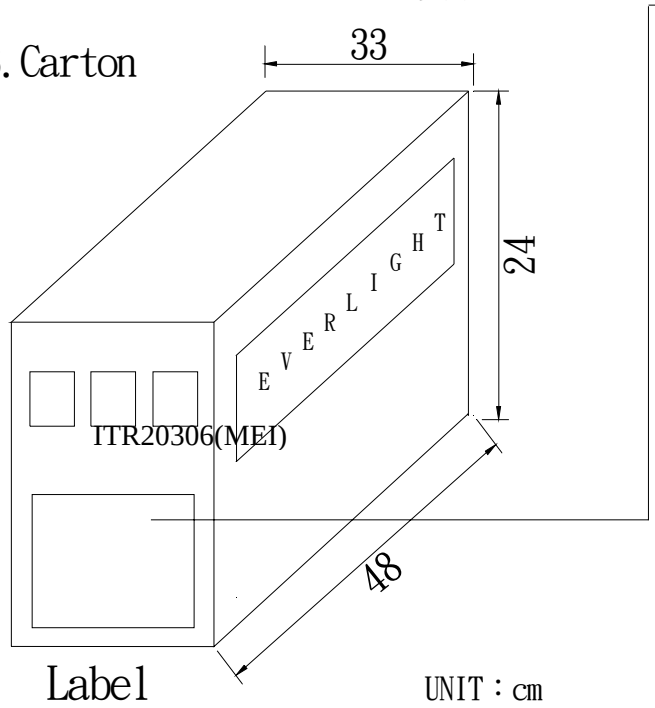
1. Bag



2. Box



3. Carton



UNIT：cm



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

Technical Data Sheet
OPTO INTERRUPTER

ITR8105

■Packing Quantity Specification

1. 150Pcs/1Bag，4Bags/1Box
2. 10Boxes/1Carton

Notes

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

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 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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