

Technical Data Sheet

OPTO INTERRUPTER

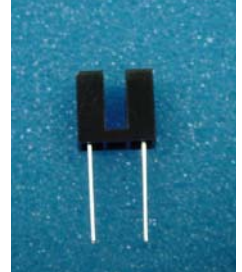
ITR8105

■ 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 optimize the mechanical resolution, coupling efficiency, and insulates ambient light. The slot in the housing 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

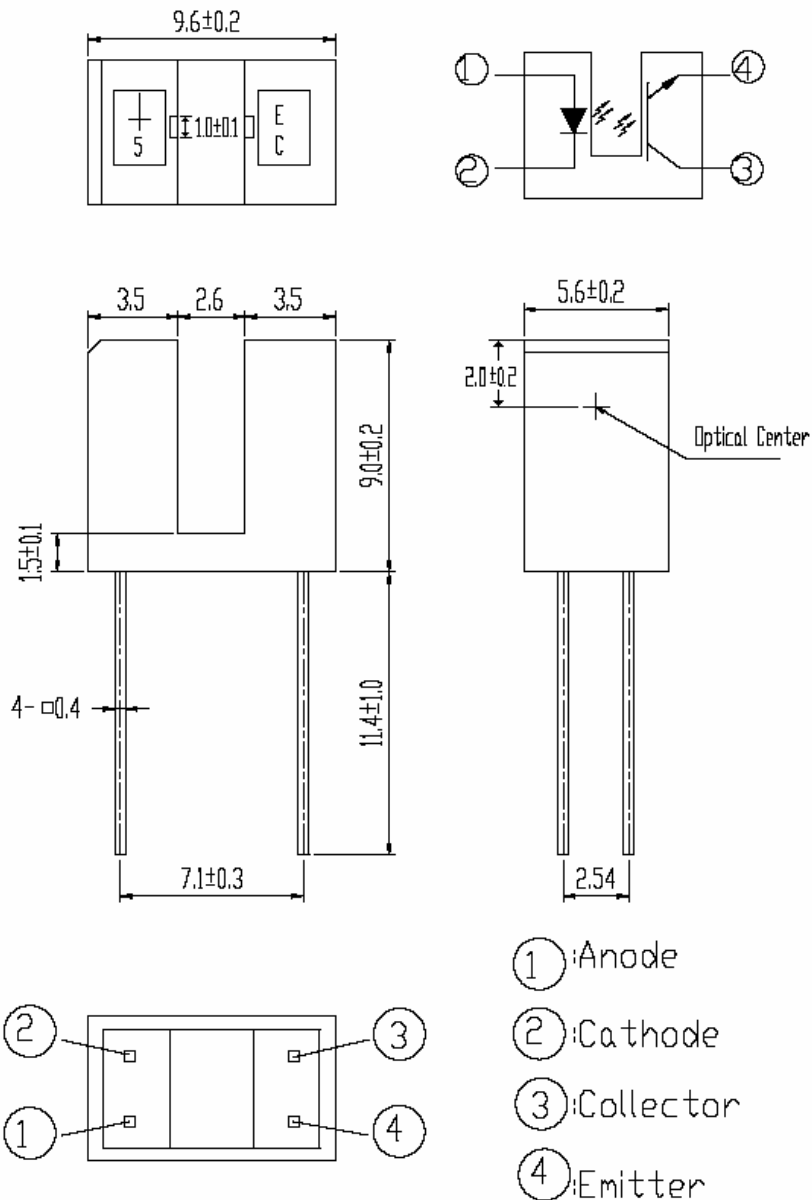
■ Device Selection Guide

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

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Package Dimensions



- Notes:**
1. All dimensions are in millimeters
 2. The tolerance not marked is ± 0.20 mm in the drawing.

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Absolute Maximum Ratings (Ta=25°C)

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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 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		T _{opr}	-25~+85	°C
Storage Temperature		T _{stg}	-40~+85	°C
Lead Soldering Temperature (1/16 inch from body for 5 seconds)		T _{sol}	260	°C

Electro-Optical Characteristics (Ta=25°C)

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	



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Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

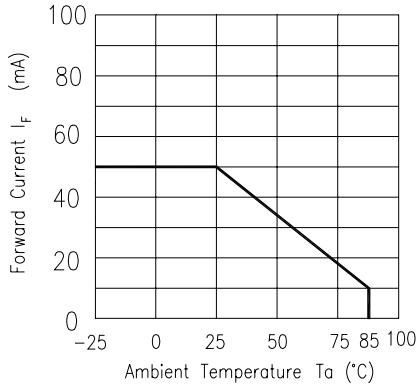


Fig. 2 Spectral Distribution

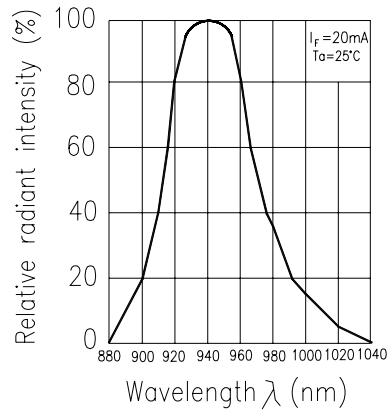


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

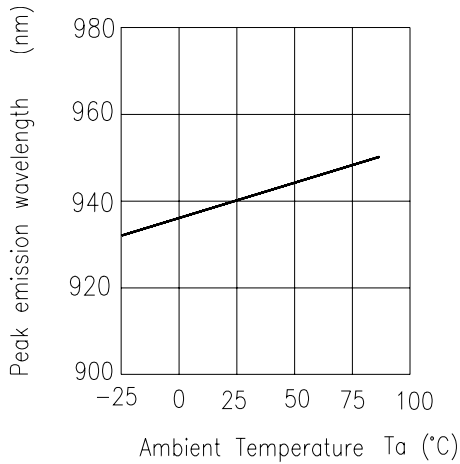


Fig. 4 Forward Current vs. Forward Voltage

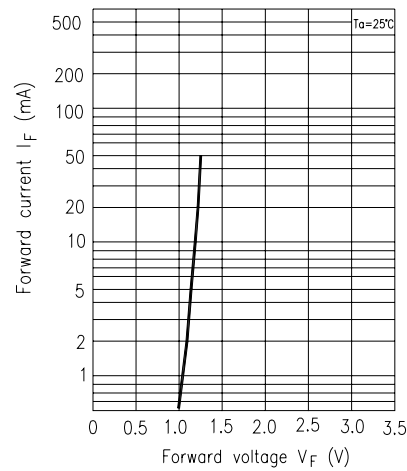


Fig. 5 Forward Voltage vs. Ambient Temperature

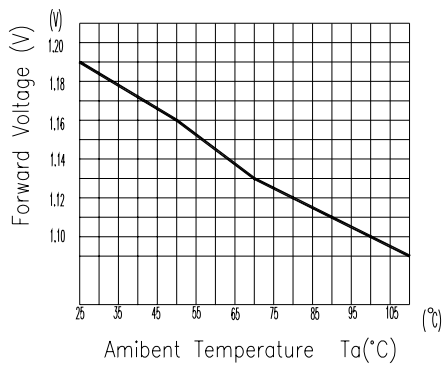
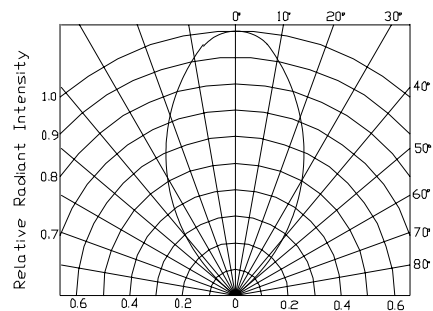


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

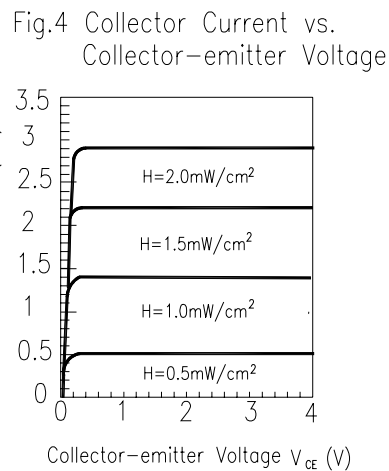
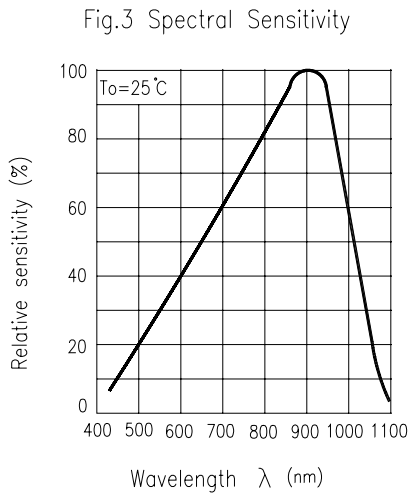
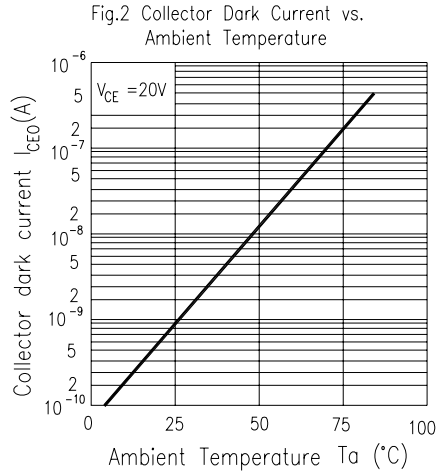
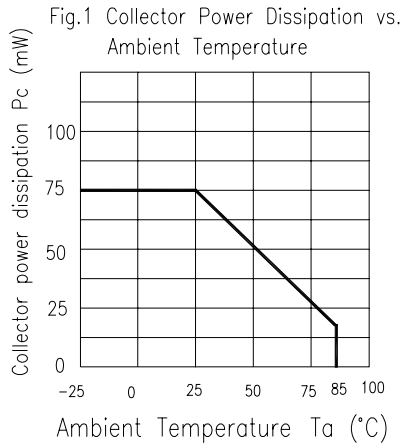




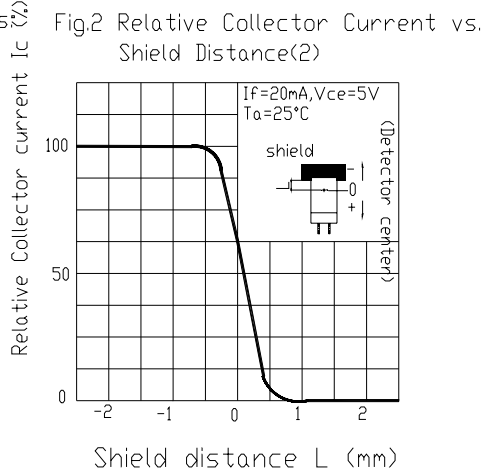
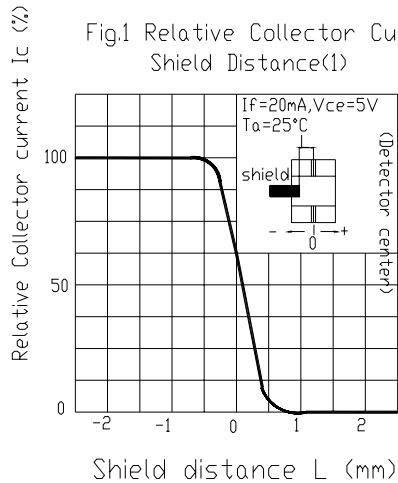
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Typical Electrical/Optical/Characteristics Curves for PT

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Typical Electro-Optical Characteristics Curves



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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		0/1
2	Temperature Cycle	H : +85°C 15mins ↕ 5mins L : -55°C 15mins	50Cycles	22pcs	V _F ≥ U×1.2 I _{C(ON)} ≤ L×0.8	0/1
3	Thermal Shock	H : +85°C 5mins ↕ 10secs L : -55°C 5mins	50Cycles	22pcs	U : Upper Specification Limit	0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs	L : Lower Specification Limit	0/1
5	Low Temperature Storage	TEMP. : -55°C	1000hrs	22pcs		0/1
6	DC Operating Life	V _{CE} =5V	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1