

Technical Data Sheet

Opto Interrupter

■ Features

- Fast response time
- High analytic
- High sensitivity
- Pb free
- This product itself will remain within RoHS compliant version



■ Descriptions

This 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 object is in between, the phototransistor could not receive the radiation.

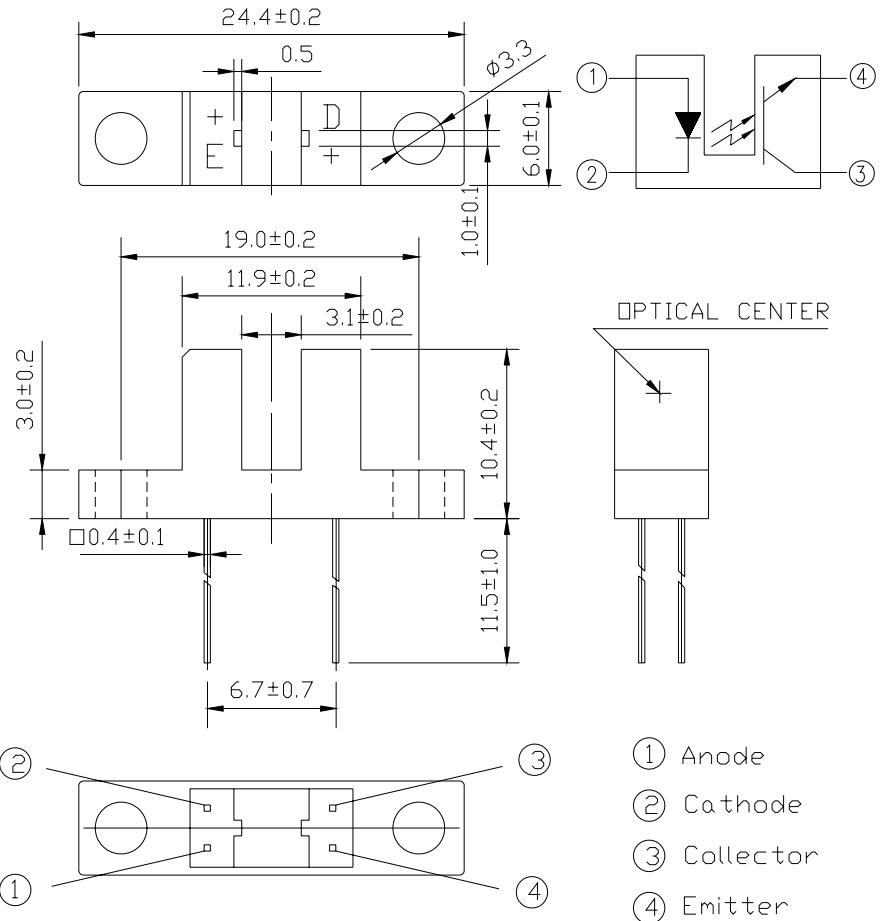
■ Applications

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

■ Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR908-7C	GaAlAs	Water Clear
PT908-7C	Silicon	Water Clear

■ Package Dimensions



■ 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 $\leq 100 \mu s$, Duty cycle=1%	I _{FP}	1	A
Output	Collector Power Dissipation	P _C	75	mW
	Collector Current	I _C	30	mA
	Collector-Emitter Voltage	B V _{CEO}	30	V
	Emitter-Collector Voltage	B V _{ECO}	5	V
Operating Temperature		T _{opr}	-25~+85	°C
Storage Temperature		T _{stg}	-40~+85	°C
Lead Soldering Temperature (*2) (1/16 inch from body for 5 seconds)		T _{sol}	260	°C

(*1) tw=100 μ sec., T=10 msec. (*2) t=5 Sec

■ Electro-Optical Characteristics (Ta=25°C)

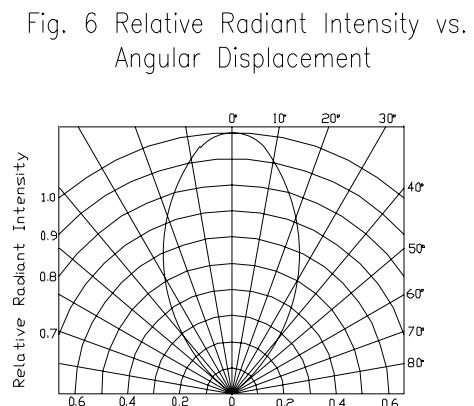
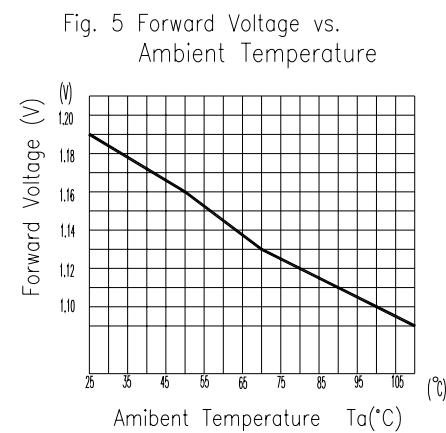
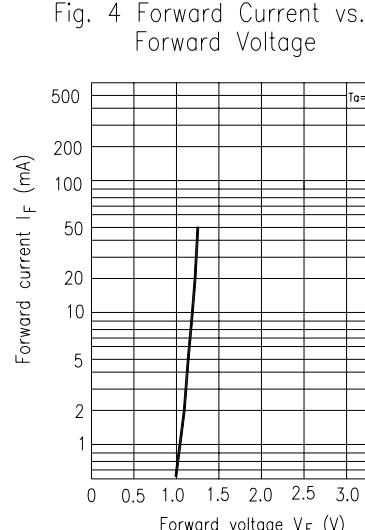
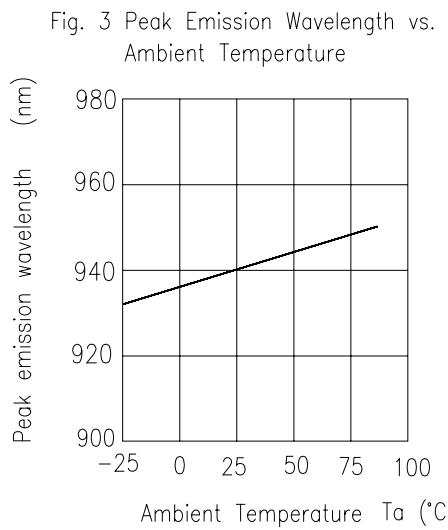
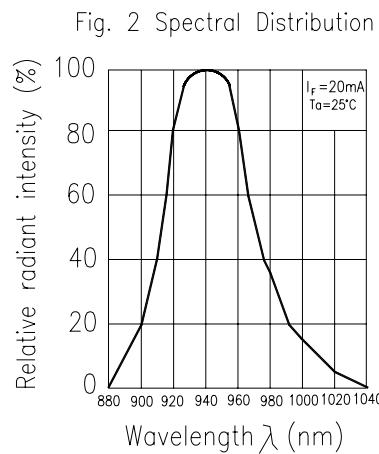
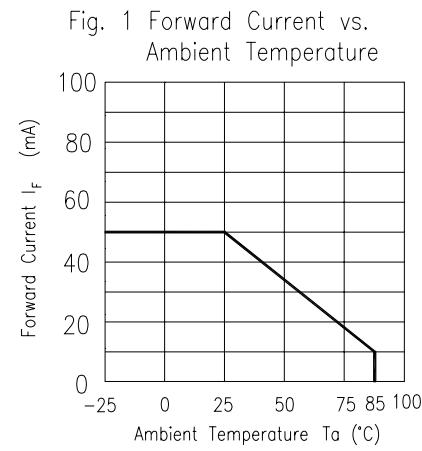
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V _F	---	1.2	1.5	V	I _F =20mA
	Reverse Current	I _R	---	---	10	μ A	V _R =5V
	Peak Wavelength	λ_p	---	940	---	nm	I _F =20mA
	View Angle	2θ _{1/2}	---	60	---	Deg	I _F =20mA
Output	Dark Current	I _{CEO}	---	---	100	nA	V _{CE} =20V, Ee=0mW/cm ²
	C-E Saturation Voltage	V _{CE(sat)}	---	---	0.4	V	I _C =2mA Ee=1mW/cm ²
Transfer Characteristics	Collect Current	I _{C(ON)}	0.9	---	15	mA	V _{CE} =5V I _F =20mA
	Rise time	t _r	---	15	---	μ sec	V _{CE} =5V I _C =1mA R _L =1KΩ
	Fall time	t _f	---	15	---	μ sec	

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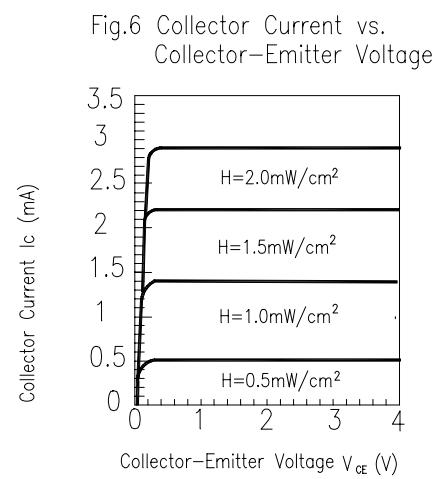
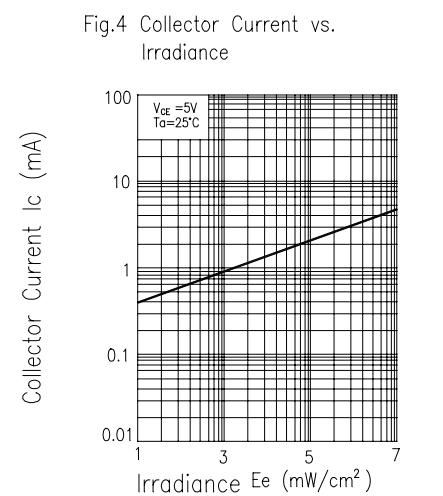
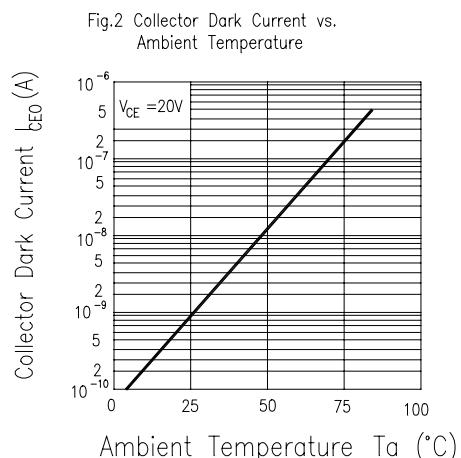
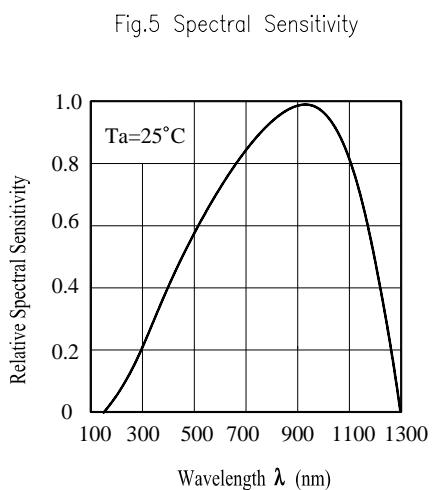
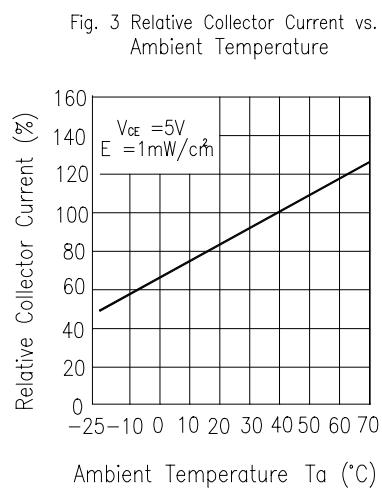
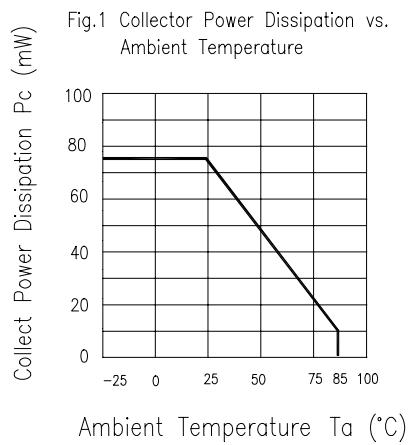
█ Typical Electrical/Optical/Characteristics Curves for IR



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█ Typical Electrical/Optical/Characteristics Curves for PT



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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 Condition	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10sec	22 pcs		0/1
2	Temperature Cycle	H : $+100^{\circ}\text{C}$ 15 mins L : -40°C 15 min	300 cycle	22 pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$	0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5 min L : -10°C 5 min	300 cycle	22 pcs	U : Upper specification limit L : Lower specification limit	0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000 hrs	22 pcs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000 hrs	22 pcs		0/1
6	DC Operating Life	$V_{CE}=5\text{V}$ $I_F=20\text{mA}$	1000 hrs	22 pcs		0/1
7	High Temperature / High Humidity	$85^{\circ}\text{C} / 85\% \text{ R.H.}$	1000 hrs	22 pcs		0/1

