

Technical Data Sheet Opto Interrupter

ITR-9707



■ Features

- .Fast response time
- .High analytic
- .Cut-off visible wavelength $\lambda_p=940\text{nm}$
- .High sensitivity
- .Pb free
- .The product itself will remain within RoHS compliant version.

■ Descriptions

The 9707 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 IRLED 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 IR908-6C and PT908-6C

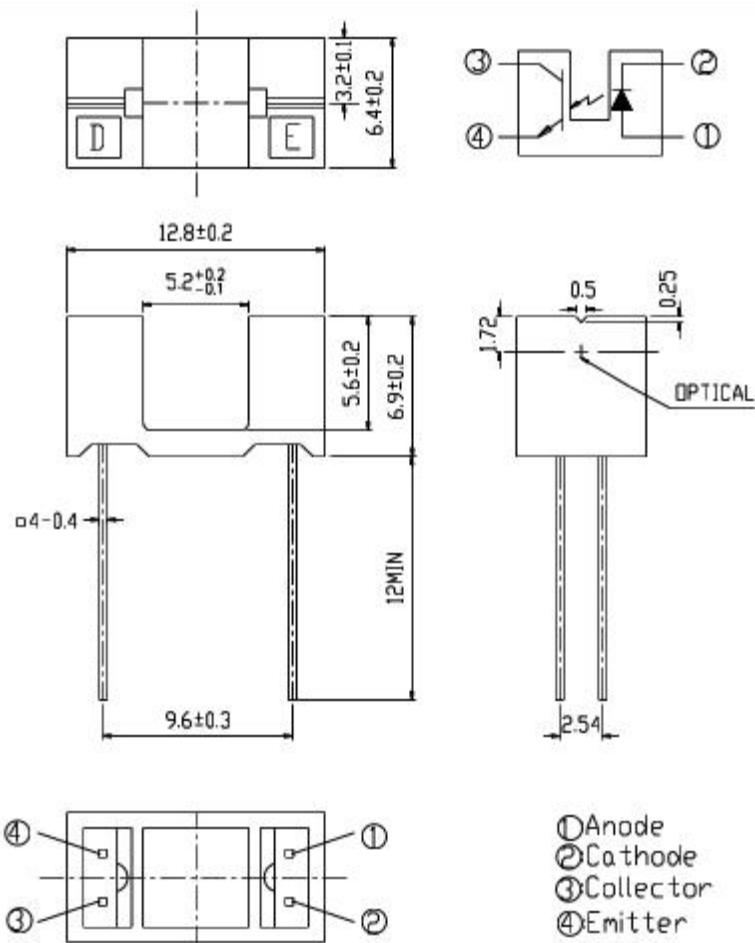
■ Applications

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

■ Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR908	GaAlAs	Water clear
PT908	Silicon	Water clear

■ Package Dimensions



Notes:

1. All dimensions are in millimeters.
2. Tolerances unless dimensions $\pm 0.2 \text{ mm}$.
3. Lead spacing is measured where the lead emerge from the package.

■ 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 ≤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	V _{CEO}	30	V
	Emitter-Collector Voltage	V _{ECO}	5	V
Operating Temperature		T _{opr}	-25~+85	°C
Storage Temperature		T _{stg}	-40~+100	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		T _{sol}	260	°C

(*1) $t_w=100 \mu \text{ sec.}$, $T=10 \text{ msec.}$ (*2) $t=5 \text{ Sec}$

■ 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	μA	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)}	0.50	---	---	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	

■ Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs.

Ambient Temperature

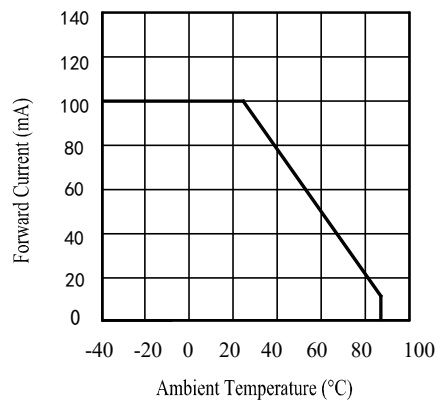


Fig.2 Spectral Distribution

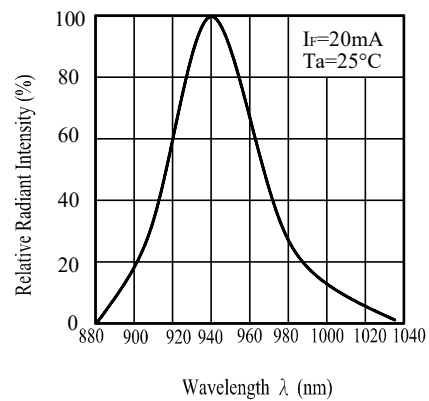


Fig.5 Relative Intensity vs.

Forward Current

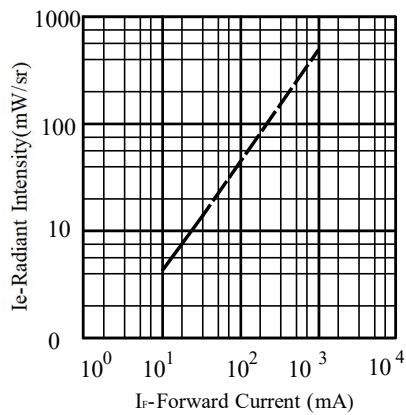


Fig.6 Relative Radiant Intensity vs.

Angular Displacement

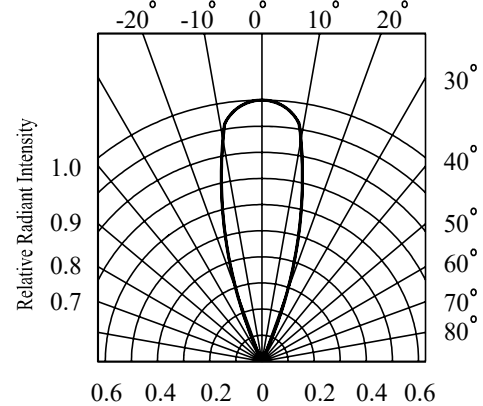


Fig.7 Relative Intensity vs.

Ambient Temperature(°C)

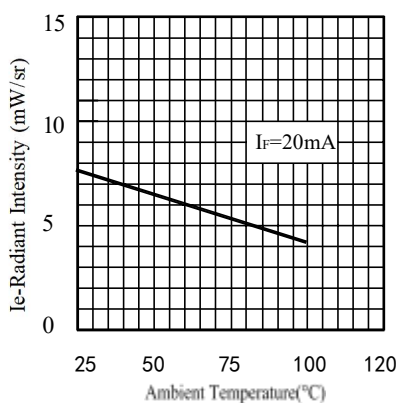
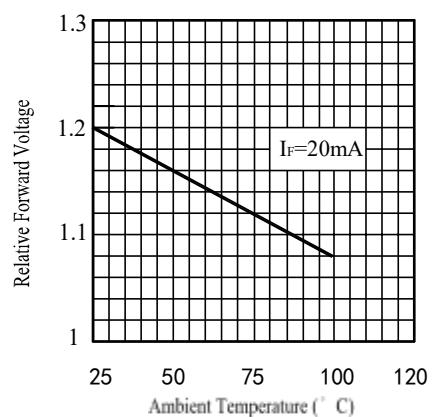


Fig.8 Forward Current vs.

Ambient Temperature(°C)



■ Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

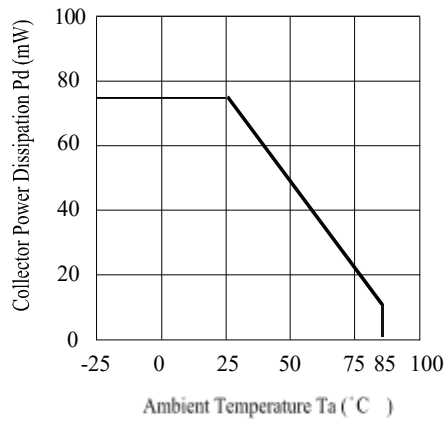


Fig.2 Spectral Sensitivity

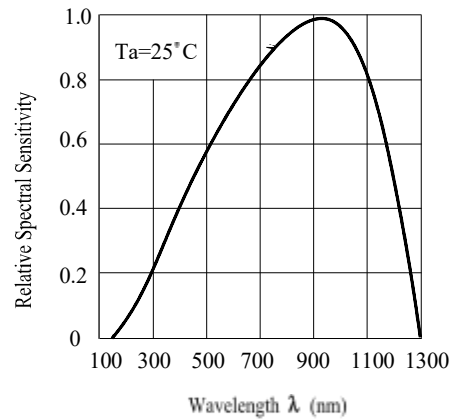


Fig.3 Relative Collector Current vs. Ambient Temperature

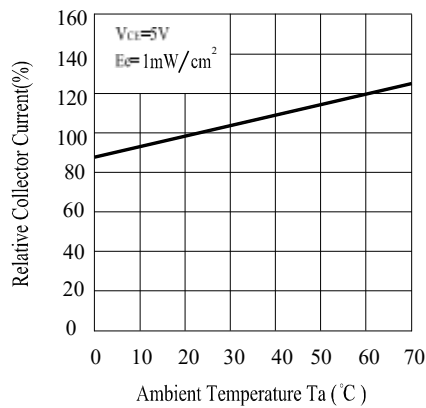


Fig.4 Collector Current vs. Irradiance

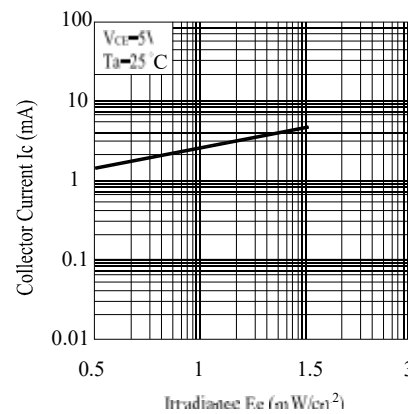


Fig.5 Collector Dark Current vs. Ambient Temperature

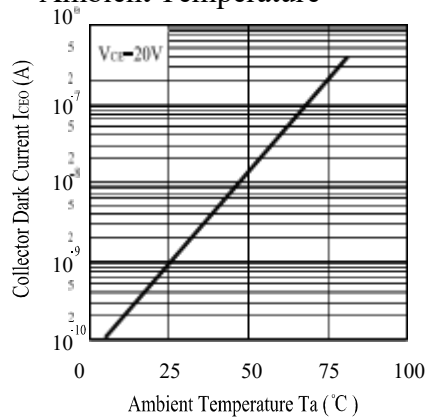


Fig.6 Collector Current vs. Collector-Emitter Voltage

