

Technical Data Sheet Opto Interrupter

ITR-9606

■ 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 ITR-9606 consist of an infrared emitting diode and an NPN silicon phototransistor, encased side-by-side on converging optical axis in a black Thermoplastic

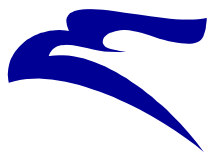
Housing The phototransistor receives radiation from the IRLED only .This is the normal Situation. But when an object is in between , phototransistor could not receives the radiation. For additional component information , please refer to IR928-6C and PT928-6C

■ Applications

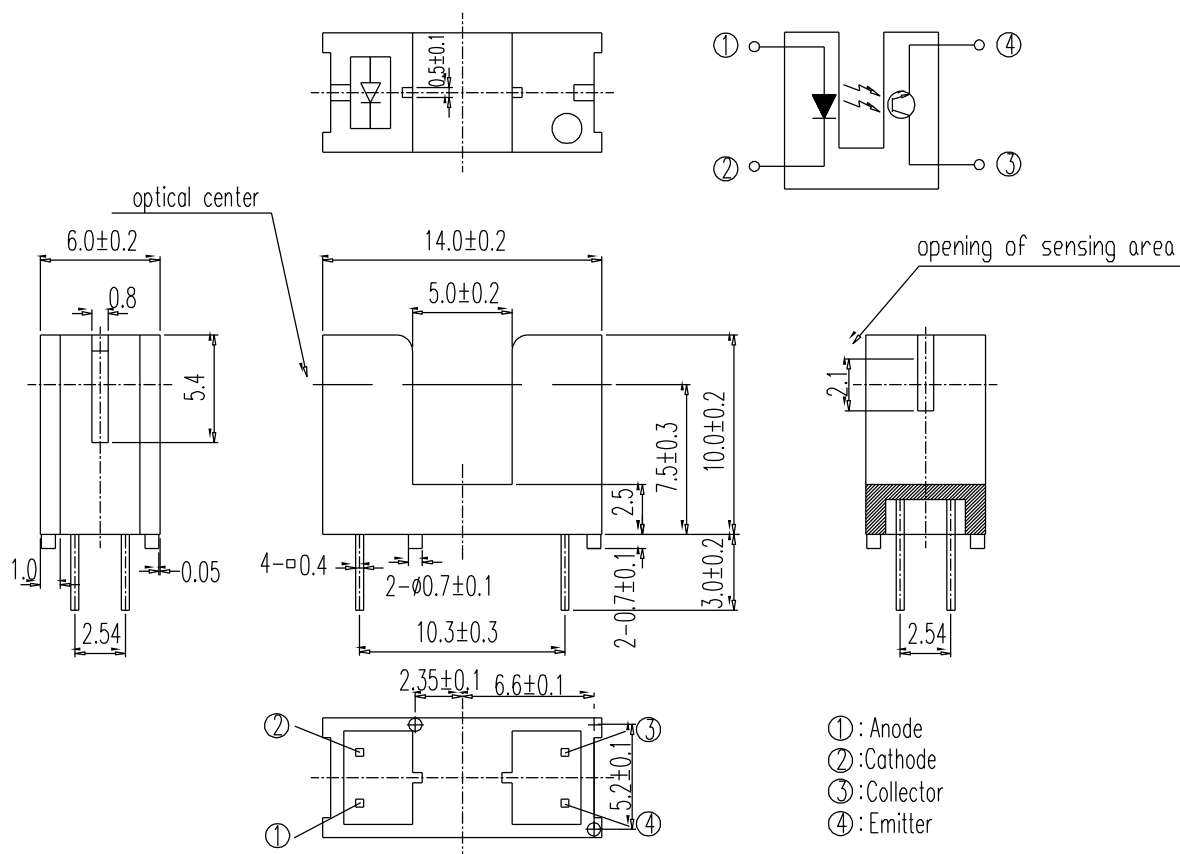
- Mouse Copier
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

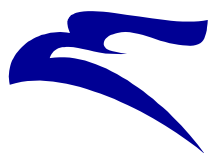
■ Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR928	GaAlAs	Water clear
PT928	Silicon	Water clear



Package Dimensions





ITR-9606

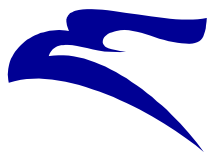
Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	100	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (*1) Pulse width ≤ 100 μs, Duty cycle=1%	I _{FP}	1	A
Output	Collector Power Dissipation	P _C	75	mW
	Collector Current	I _C	50	mA
	Collector-Emitter Voltage	B V _{CEO}	30	V
	Emitter-Collector Voltage	B V _{ECO}	5	V
Operating Temperature		Topr	-25~+85	°C
Storage Temperature		Tstg	-40~+85	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	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 _{F1}	---	1.2	1.6	V	I _F =20mA
		V _{F2}	---	1.4	1.85		I _F =100mA, tp=100 μs, tp/T=0.01
		V _{F3}	---	2.6	4.0		I _F =1A, tp=100 μs, tp/T=0.01
	Reverse Current	I _R	---	---	10	μA	V _R =5V
	Peak Wavelength	λ _p	---	940	---	nm	I _F =20mA
	View Angle	2θ1/2	---	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)}	0.5	---	10	mA	V _{CE} =5V I _F =20mA
	Rise time	t _r	---	15	---	μsec	V _{CE} =5V I _C =1mA R _L =1KΩ
	Fall time	t _f	---	15	---	μsec	



Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs.

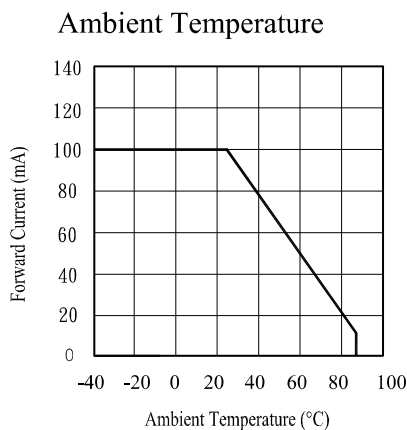


Fig.2 Spectral Distribution

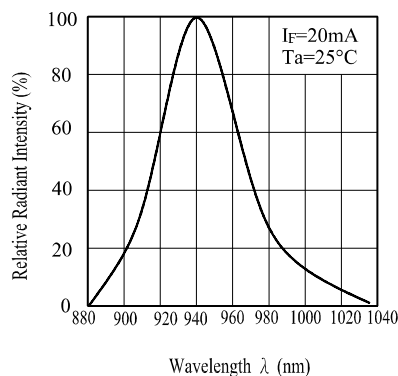


Fig.5 Relative Intensity vs.

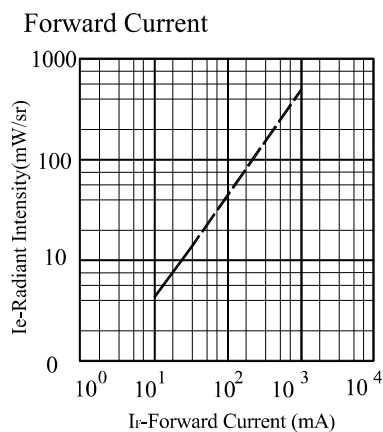


Fig.6 Relative Radiant Intensity vs.

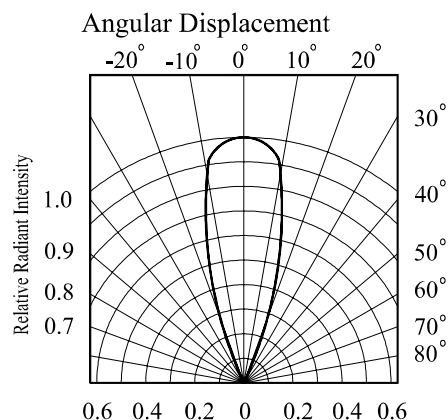


Fig.7 Relative Intensity vs.

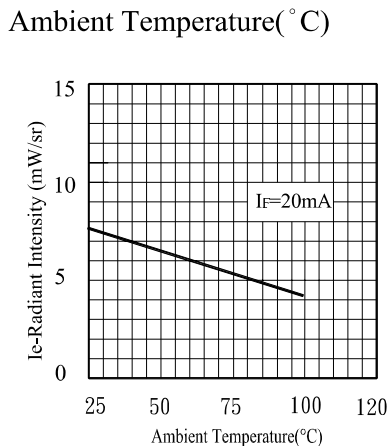
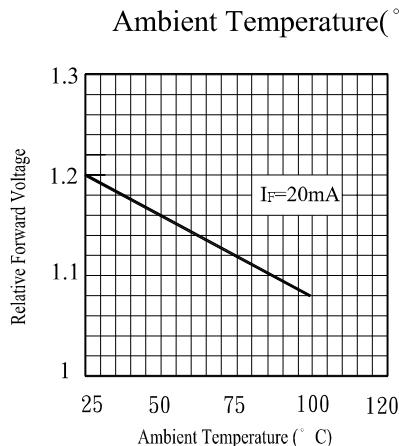
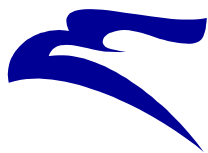


Fig.8 Forward Current vs.





Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs.
Ambient Temperature

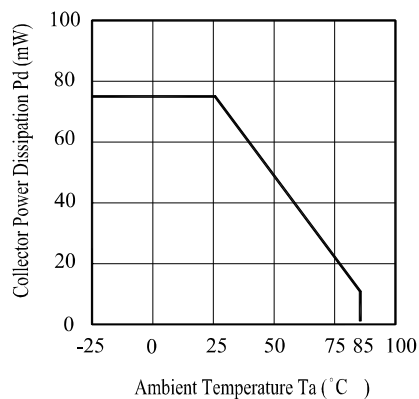


Fig.2 Spectral Sensitivity

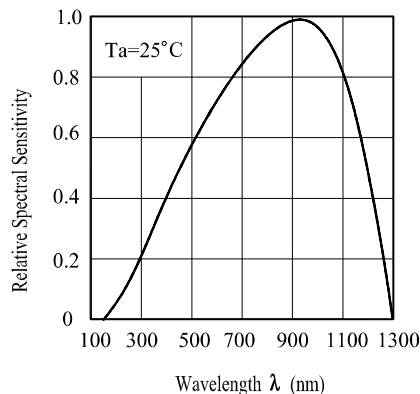


Fig.3 Relative Collector Current vs.
Ambient Temperature

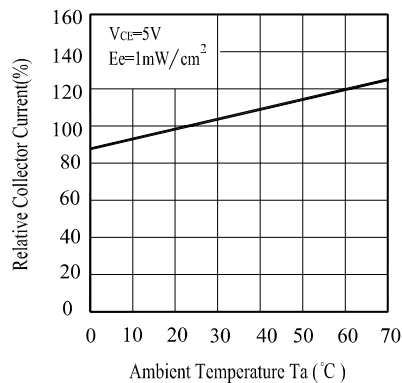


Fig.4 Collector Current vs.
Irradiance

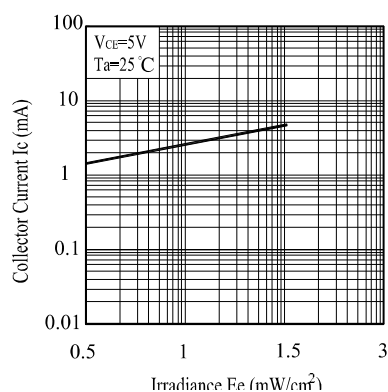


Fig.5 Collector Dark Current vs.
Ambient Temperature

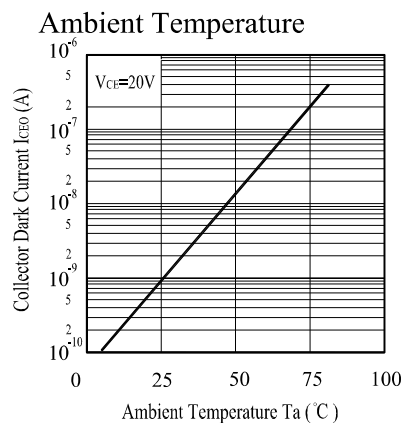


Fig.6 Collector Current vs.
Collector-Emitter Voltage

