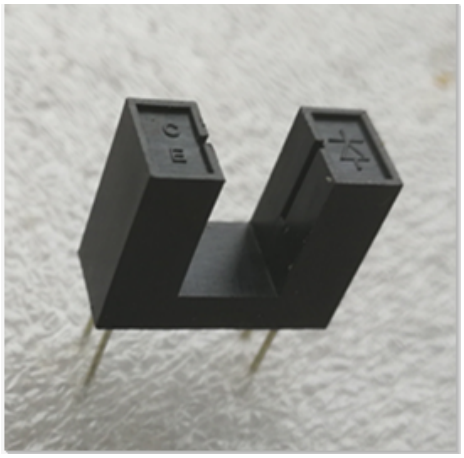
ITR8402

一，特点：

1 采用高发射功率红外光电二极管和
高灵敏度光敏晶体管组成。

2 光缝宽度：0.8mm；光轴
中心：2.2mm。



Description

- The ITR8402 consist of an infrared emitting diode and an silicon phototransistor, encased side-by-side on converging optical axis in a black thermoplastic housing,
- The phototransistor receives radiation from the IR LED 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 IR908-7C and PT908-7C

Applications

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

EVERCOLORS

Device Selection Guide ITR8402

Part Category	Chip Material	Lens Color
IR	GaAlAs	Water Clear
PT	Silicon	Water Clear

Absolute Maximum Ratings (Ta=25℃)

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
Output	Collector Power Dissipation	Pd	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+100	℃
Lead Soldering Temperature (*2) (3mm from the package)		Tsol	260	℃

Note: (*1) tw=100 μsec. , T=10 msec.
(*2) Soldering time≦5 sec.

Electro-Optical Characteristics (Ta=25℃)

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
Output	Dark C urrent	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	---	---	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	

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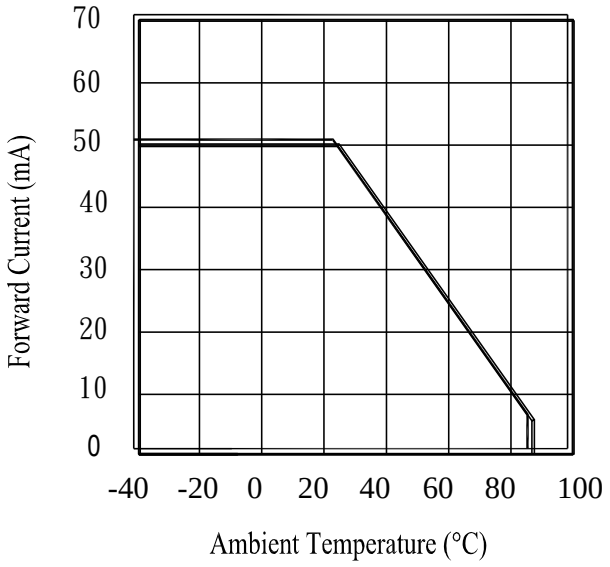
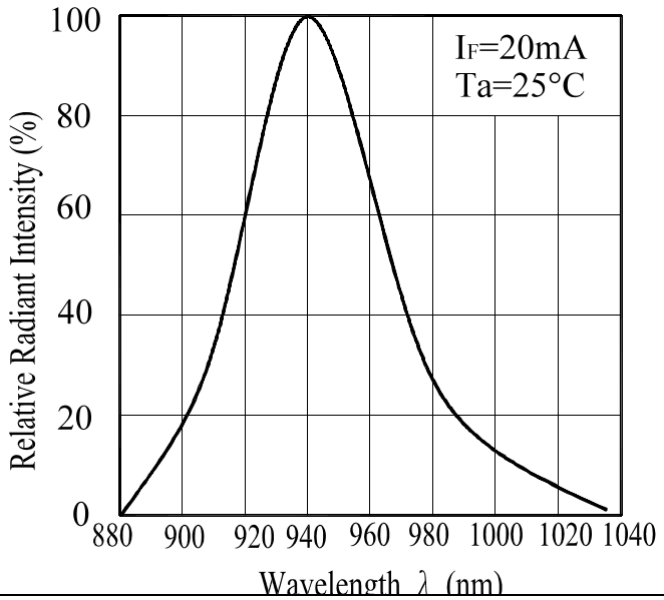
Typical Electrical/Optical/Characteristics Curves for IR

ITR8402

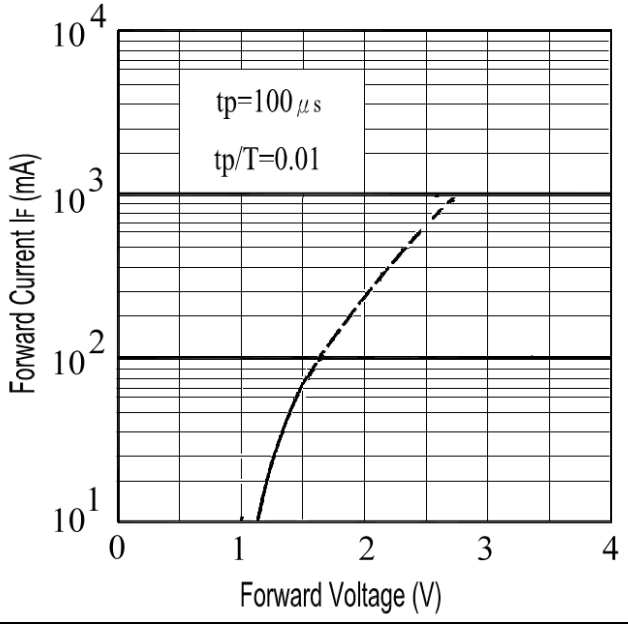
Collector Power Dissipation vs. Ambient Temperature



Spectral Sensitivity



Forward Current vs. Forward Voltage



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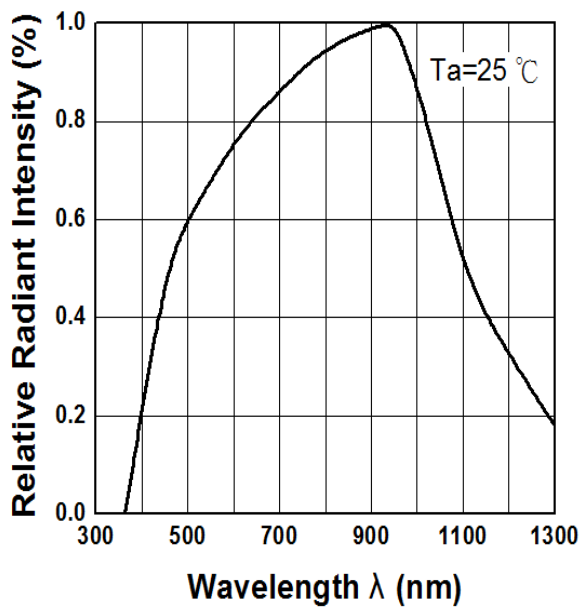
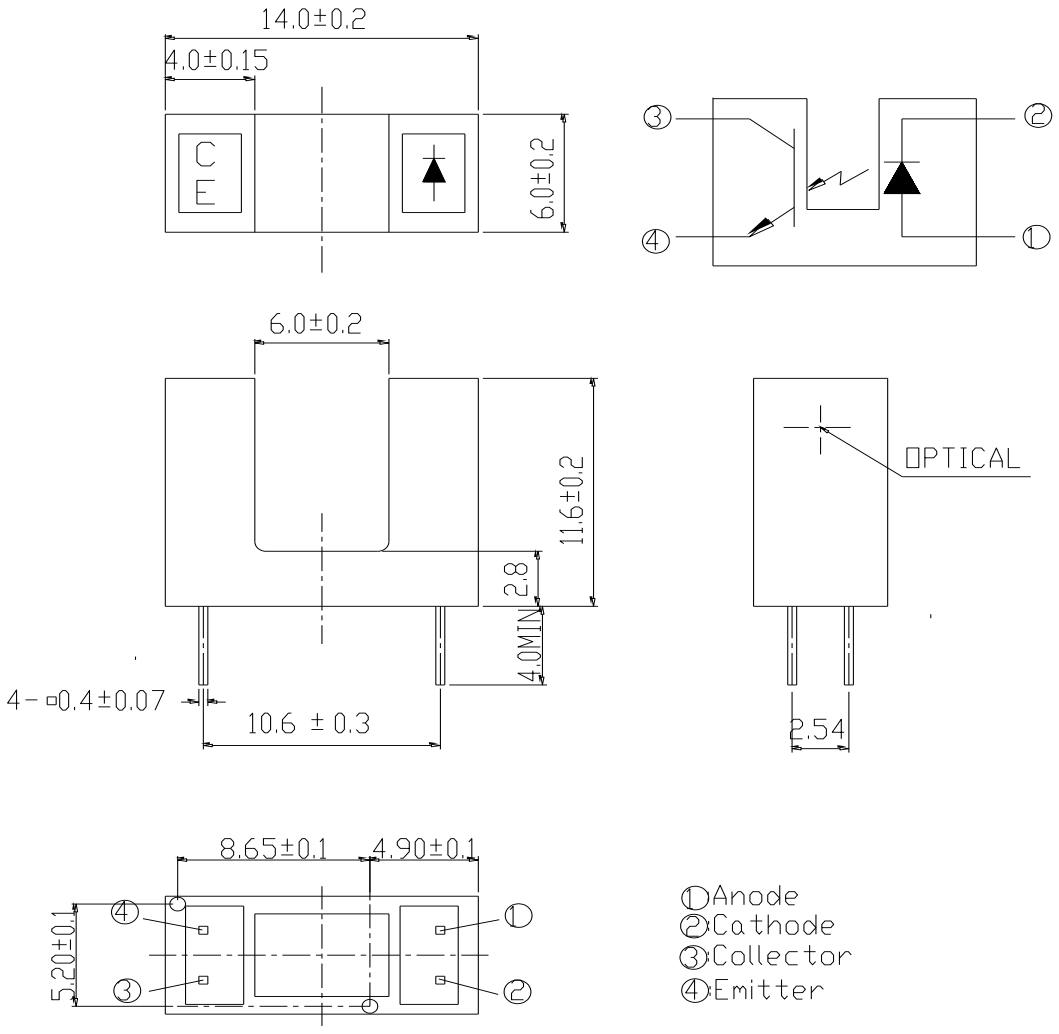
Typical Electrical/Optical/Characteristics Curves for PT

Spectral Sensitivity



Package Dimension



Notes:

1. All dimensions are in millimeters.
2. Tolerances unless dimensions ±0.3mm.
3. Lead spacing is measured where the lead emerge from the package.

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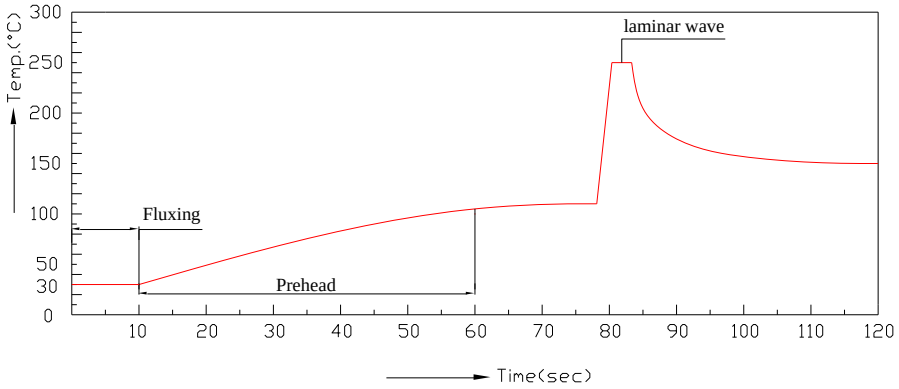
Soldering

1. Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.
2. Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300°C Max. (30W Max.)	Preheat temp.	100°C Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	3mm Min.(From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)

3. Recommended soldering profile



4. Avoiding applying any stress to the lead frame while the Photo Interrupter are at high temperature particularly when soldering.
5. Dip and hand soldering should not be done more than one time
6. After soldering the Photo Interrupter, the epoxy bulb should be protected from mechanical shock or vibration until the Photo Interrupter return to room temperature.
7. A rapid-rate process is not recommended for cooling the Photo Interrupter down from the peak temperature.
8. Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the Photo Interrupter.
9. Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

Cleaning

Do not clean the Photo Interrupter by the ultrasonic.

Heat Management

1. Heat management of Photo Interrupter must be taken into consideration during the design stage of Photo Interrupter application. The current should be de-rated appropriately by referring to the de-rating curve found in each product specification.
2. The temperature surrounding the Photo Interrupter in the application should be controlled.