

Descriptions

IRPT807 is a light reflection switch which includes a GaAs IR-LED transmitter and a NPN photo-transistor with a high sensitive receiver for short distance, operating in the infrared range. Both components are mounted side-by-side in a plastic package.

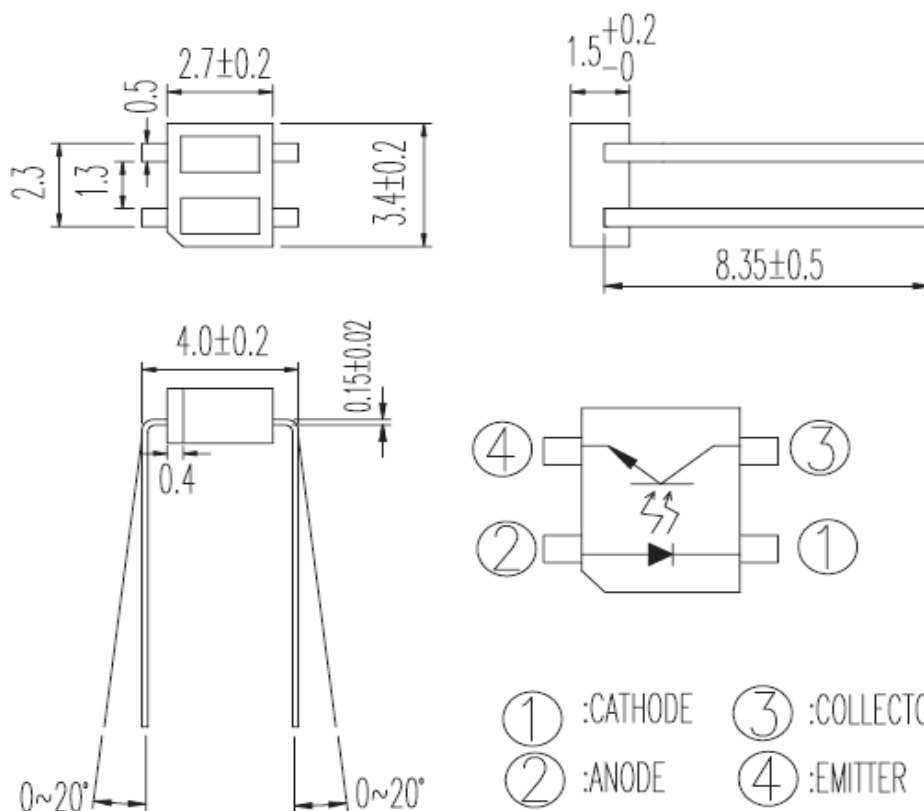
Features

- Fast response time
- High sensitivity
- Cut-Off visible wavelength
- Compact
- Pb free
- This product itself will remain within RoHS compliant version.

Applications

- Camera
- VCR
- Floppy disk driver
- Cassette type recorder
- Various microcomputer control equipment

Package Dimensions



- 1.All dimensions are in millimeters
- 2.Tolerances unless dimensions ± 0.25 mm

Absolute Maximum Ratings (Ta=25°C)

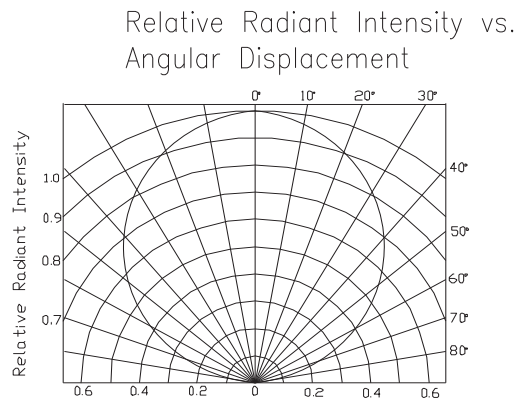
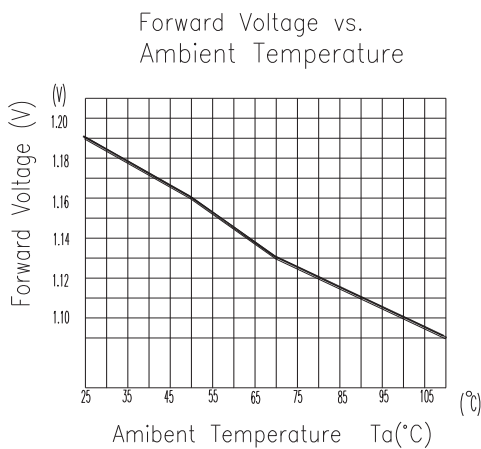
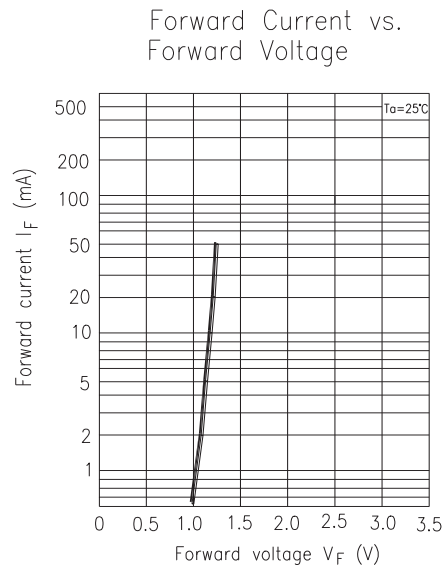
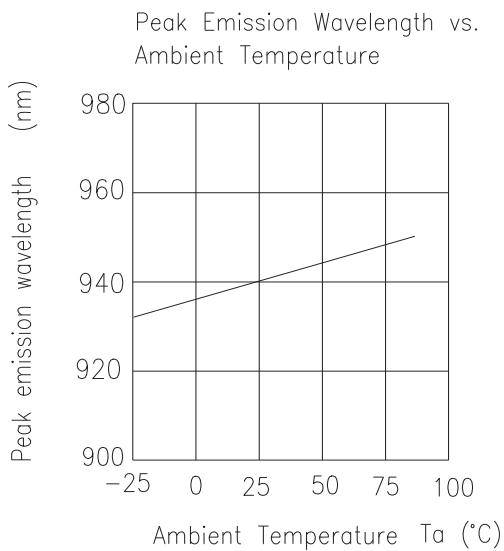
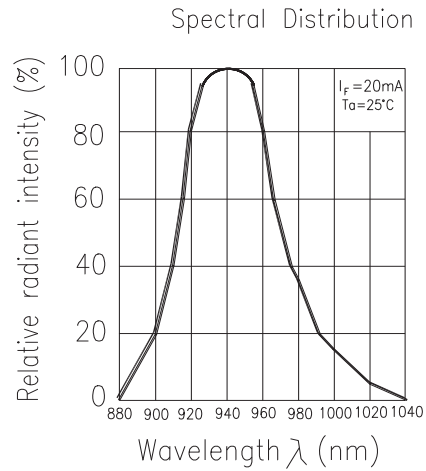
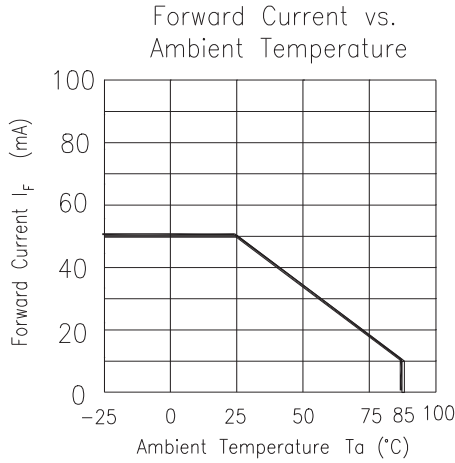
Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (*1) Pulse width ≤ 100 μs, Duty cycle=1%	I _{FP}	1	A
	Collector Power Dissipation	P _C	75	mW
Output	Collector Current	I _C	50	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}	-30~+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) $t=5 \text{Sec}$

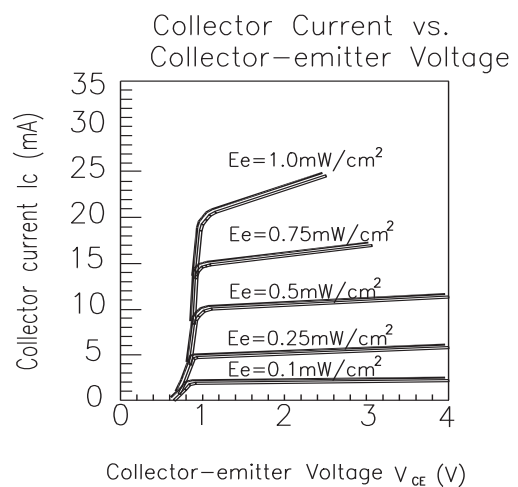
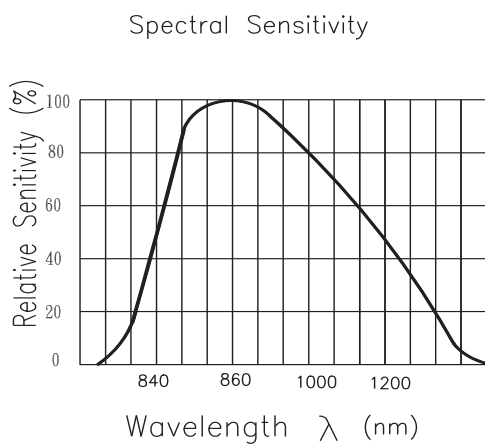
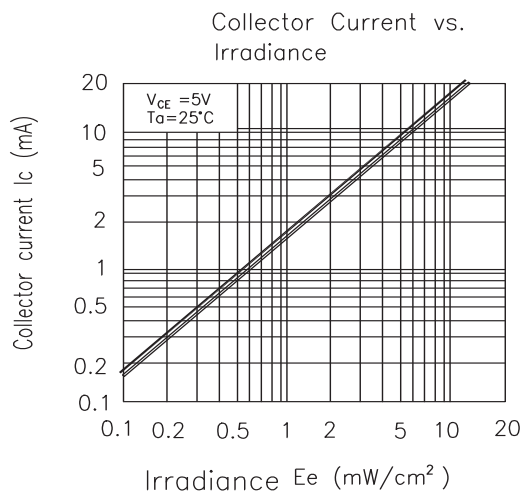
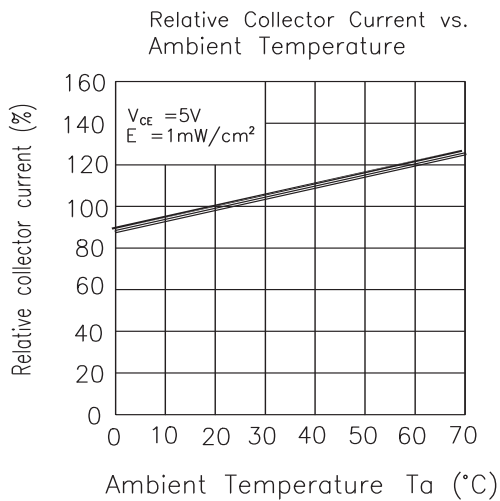
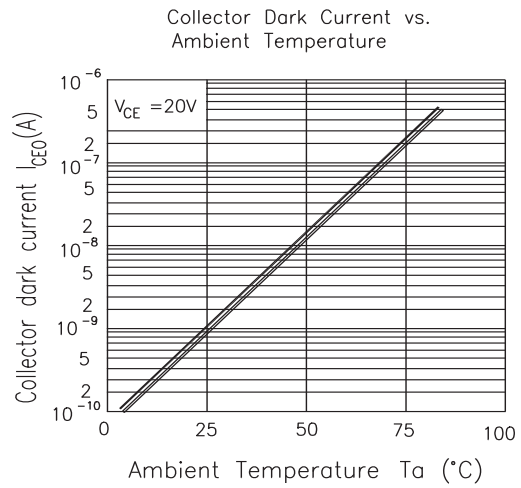
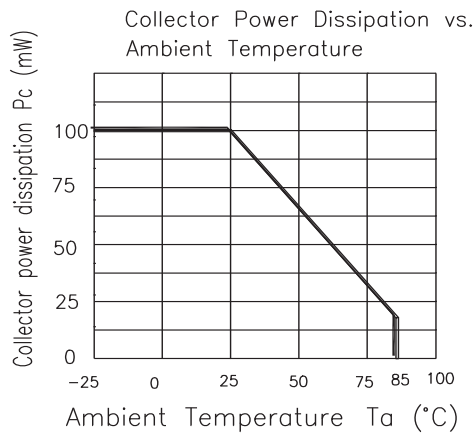
Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V _F	---	1.2	1.6	V	I _F =20mA
	Reverse Current	I _R	---	---	10	μA	V _R =6V
	Peak Wavelength	λ _p	---	940	---	nm	I _F =20mA
Output	Dark Current	I _{CEO}	---	---	100	nA	V _{CE} =10V, E _e =0mW/cm ²
	Collect Current	I _{C(ON)}	0.1	---	---	mA	V _{CE} =5V I _F =20mA
	Leakage Current	I _{CEOD}	---	---	1	nA	V _{CE} =5V I _F =20mA
Transfer Characteristics	Rise time	t _r	---	20	---	μs	V _{CE} =2V I _C =0.1mA R _L =1KΩ d=1mm
	Fall time	t _f	---	20	---	μs	

Typical Electrical-Optical Characteristics Curves for IR

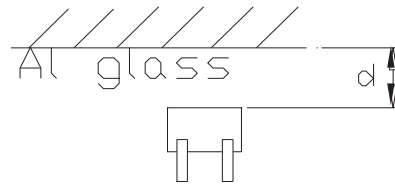
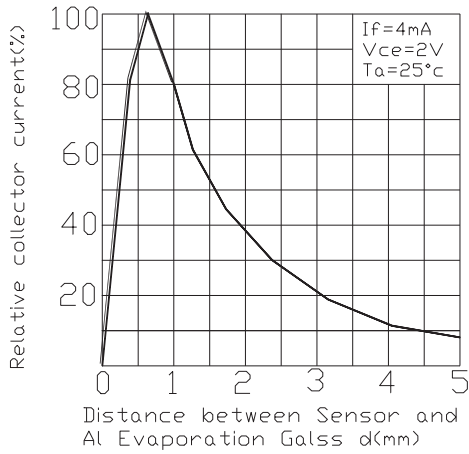


Typical Electrical-Optical Characteristics Curves for PT

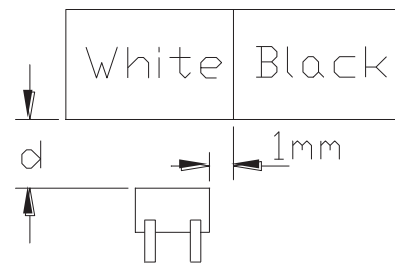
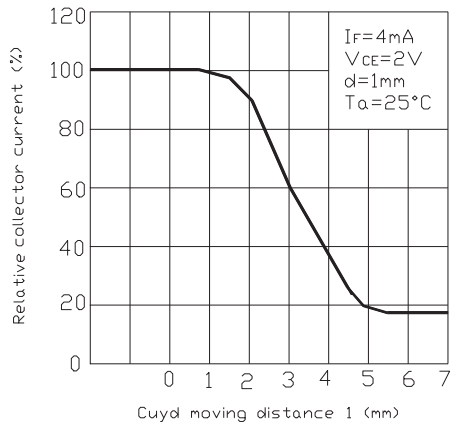


Typical Electrical/Optical/Characteristics Curves for IRPT

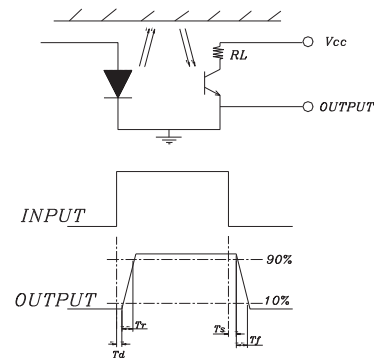
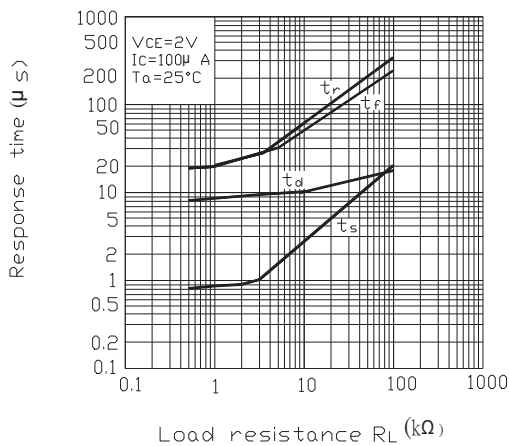
Relative Collector Current vs. Distance between Sensor and Al Evaporation Galss



Relative Collector Current vs. Card Moving Distance (l)



Response Time vs. Load Resistance



Device Selection Guide

Device No.	Chip Material
IR	GaAs
PT	Silicon

Notes:

- 1.All dimensions are in millimeter.
- 2.General Tolerance:± 0.2mm
- 3.Lead spacing is measured where the lead emerge from the package.
- 4.Above specification may be changed without notice. will reserve authority on material change for above specification.
- 5.When using this product , please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
- 6.The LEDs described here are intended to be used for ordinary electronic equipment (such as office equipment,communication equipment and household applications).Consult Sales in advance for the applications in which exceptional reliability is required,particularly when the failure or malfunction of the LEDs may directly jeopardize life or health.(such as in aviation,transportation, traffic control equipment, medical and life support systems and safety devices).
- 7.The light output from the high luminous intensity LEDs may cause injury to human eyes when viewed directly.
- 8.The appearance and specifications of the product may be modified for improvement without prior notice.