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DATA SHEET

PART NO. : PA-ITRLT8102

REV : A / 0

CUSTOMER'S APPROVAL : _____

DCC : _____

DRAWING NO. : DS-81P-22-0007

DATE : 2022-07-23

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LD-R/E020

Descriptions

The PA-ITRLT8102 consist of an infrared emitting diode and an NPN siliconphototransistor, encased side-by-side on converging optical axis in a blackthermoplastic housing The phototransistor receives radiation from the IR only .This is the normalsituation. But when an object is in between ,phototran sistor could not receives the radiation.

Features

Fast response time

High analytic

Cut-off visible wavelength $\lambda_p=940\text{nm}$

High sensitivity

Pb free

This product itself will remain within RoHS compliant version

Applications

Printers

Switch Scanner

Floppy disk driver

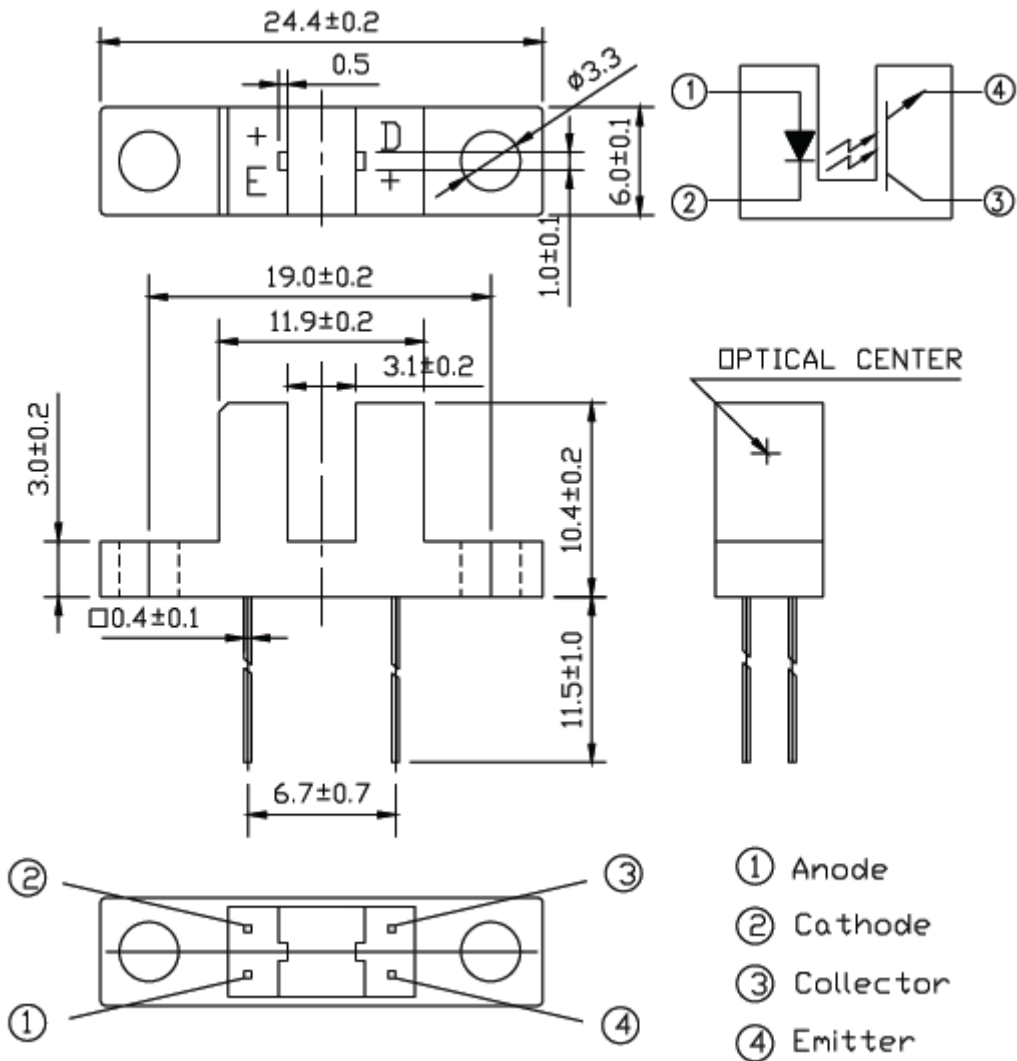
Non-contact Switching

For Direct Board

Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR	GaAIAs	Water clear
PT	Silicon	Water clear

Package Dimension



Note:

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

Absolute Maximum Ratings

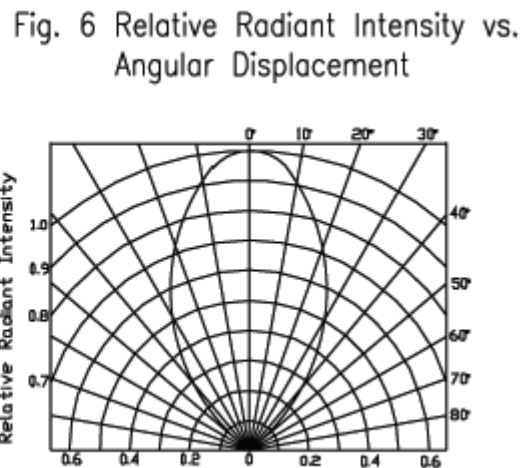
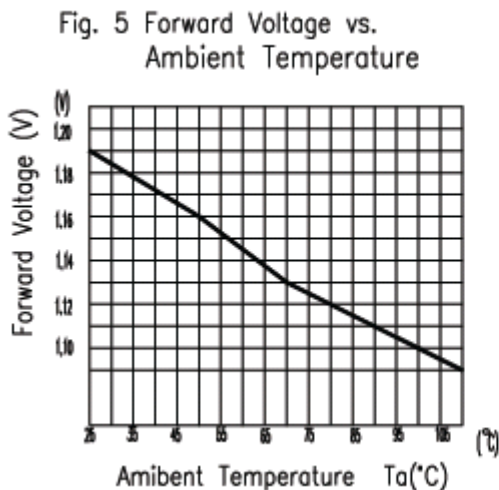
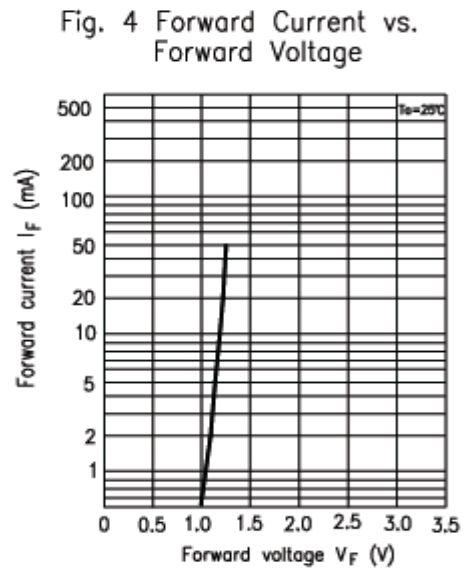
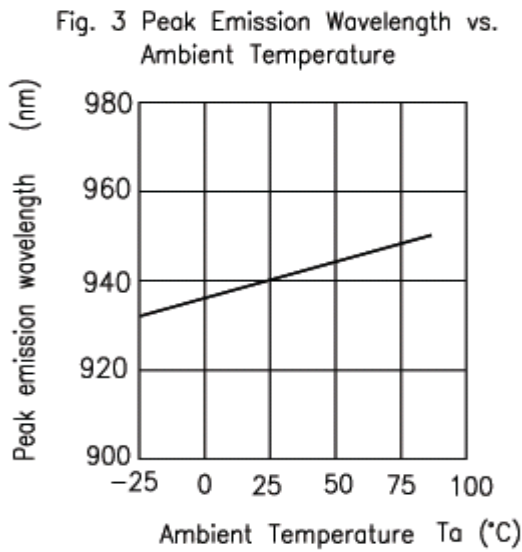
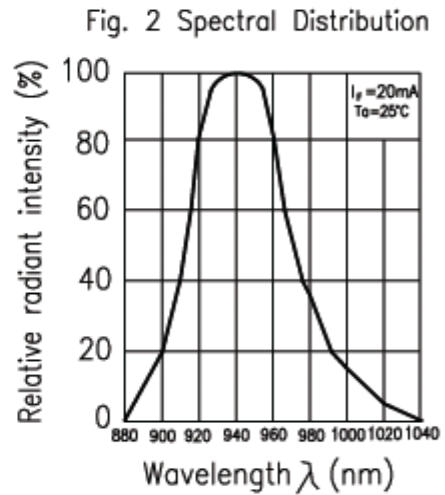
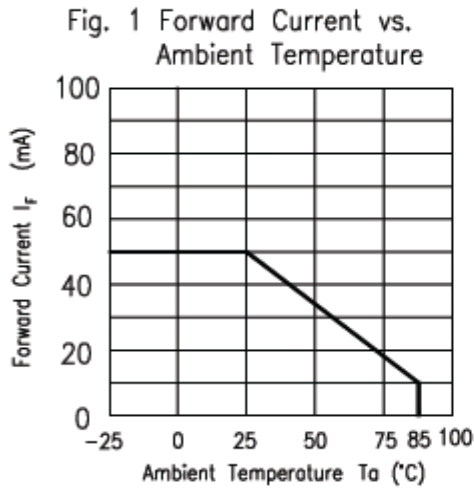
Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (*1) Pulse width ≤ 100 μs, Duty cycle=1%	I _{FP}	1	A
Output	Collector Power Dissipation	P _C	75	mW
	Collector Current	I _C	30	mA
	Collector-Emitter Voltage	B V _{CEO}	30	V
	Emitter-Collector Voltage	B V _{ECO}	5	V
Operating Temperature		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) tw=100 μsec. , T=10 msec. (* 2) t=5 Sec

Electro-Optical Characteristics

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	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)}	0.9	---	15	mA	V _{CE} =5V I _F =20mA
	Rise time	t _r	---	15	---	μsec	V _{CE} =5V I _C =1mA
	Fall time	t _f	---	15	---	μsec	R _L =1KΩ

Typical Electrical/Optical/Characteristics Curves for IR



Typical Electrical/Optical/Characteristics Curves for PT

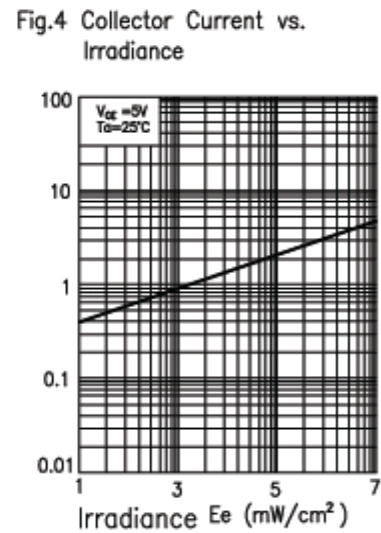
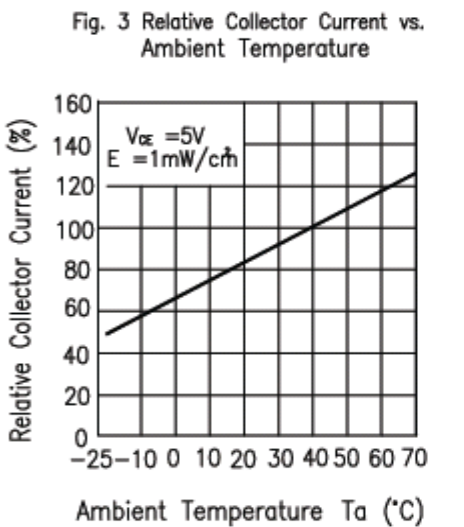
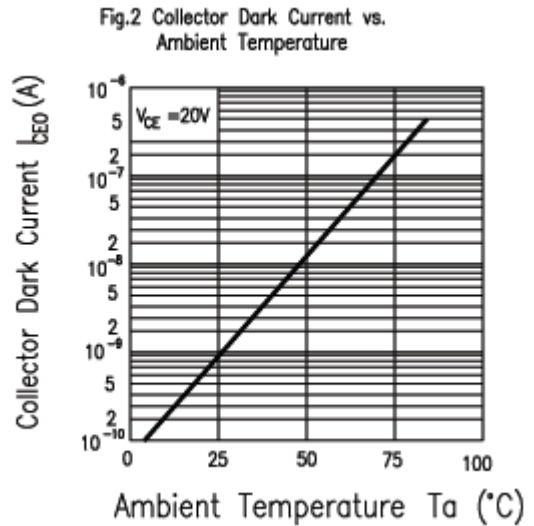
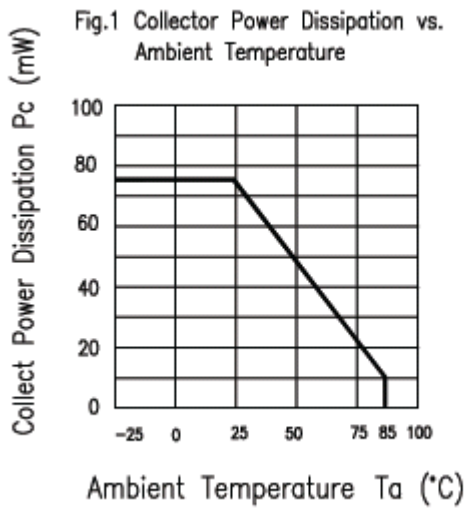


Fig.5 Spectral Sensitivity

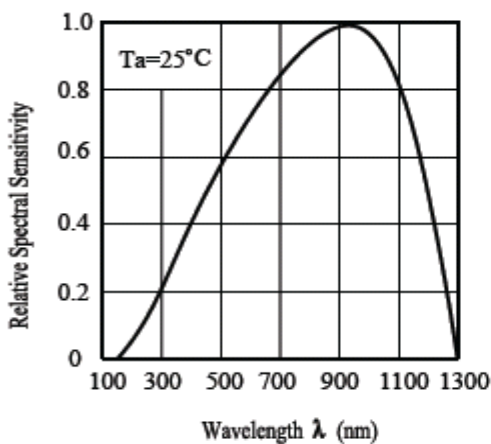
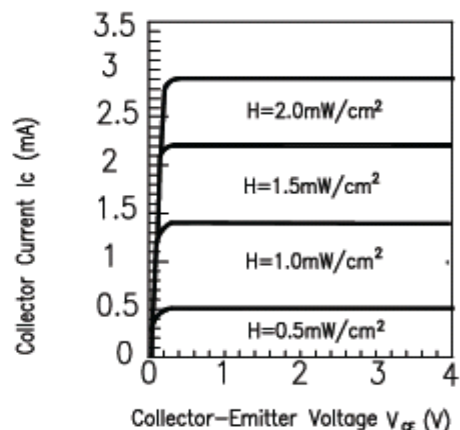


Fig.6 Collector Current vs. Collector-Emitter Voltage



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°C ± 5 °C	10sec	22 pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U :Upper specification limit L :Lower specification limit	0/1
2	Temperature Cycle	H : +100°C 15 mins \updownarrow 5 min \updownarrow L : -40°C 15 min	300 cycle	22 pcs		0/1
3	Thermal Shock	H : +100°C 5 min \updownarrow 10 sec \updownarrow L : -10°C 5 min	300 cycle	22 pcs		0/1
4	High Temperature Storage	TEMP. : +100°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} =5V I _F =20mA	1000 hrs	22 pcs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 pcs		0/1

**Notes**

1. Above specification may be changed without notice. WE will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instruction for using outlined in these specification sheets. Para light 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.
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