



PARA LIGHT ELECTRONICS CO., LTD.

11F., No. 8, Jiankang Rd., Zhonghe Dist., New Taipei City 235, Taiwan,

Tel: 886-2-2225-3733

Fax: 886-2-2225-4800

E-mail: para@para.com.tw

<http://www.para.com.tw>

DATA SHEET

PART NO. : PA-ITRLT8104

REV : A / 0

CUSTOMER'S APPROVAL : _____

DCC : _____

DRAWING NO. : DS-81P-22-0008

DATE : 2022-07-23

Page : 1

LD-R/E020



INFRARED REMOTE CONTROL RECEIVER MODULE

PA-ITRLT8104

REV:A / 0

Descriptions

The PA-ITRLT8104 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 IR only .This is the normal situation. But when an object is in between, phototransistor could not receive 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

Mouse Copier

Switch Scanner

Floppy disk driver

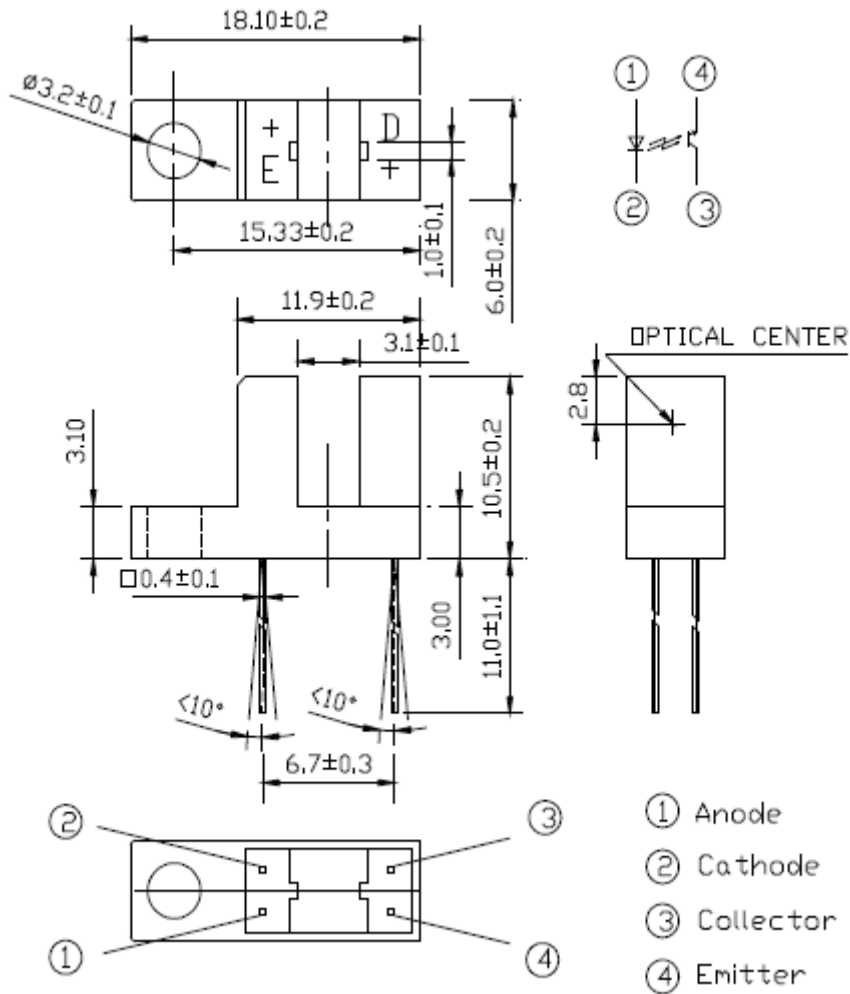
Non-contact Switching

For Direct Board

Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR	GaAlAs	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	P _d	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	20	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}	-40~+85	°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

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, E _e =0mW/cm ²
	C-E Saturation Voltage	V _{CE(sat)}	---	---	0.4	V	I _C =2mA E _e =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

Fig. 1 Forward Current vs. Ambient Temperature

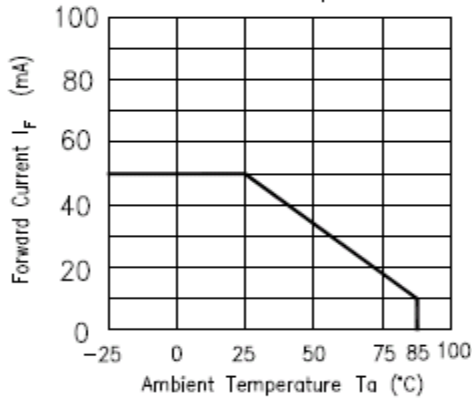


Fig. 2 Spectral Distribution

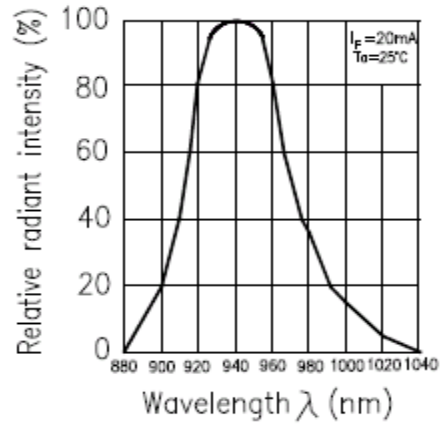


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

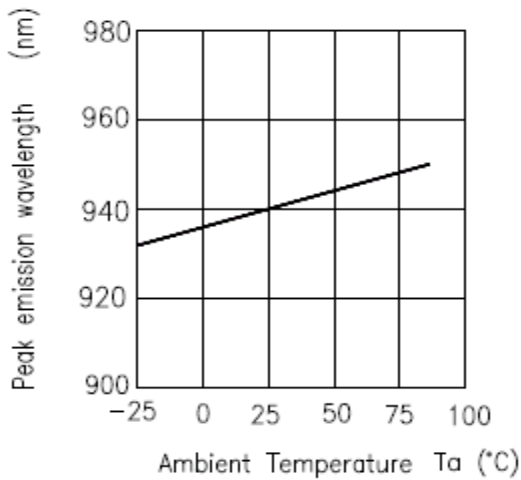


Fig. 4 Forward Current vs. Forward Voltage

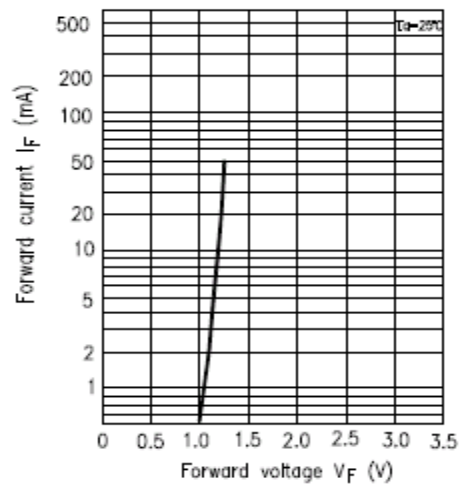


Fig. 5 Forward Voltage vs. Ambient Temperature

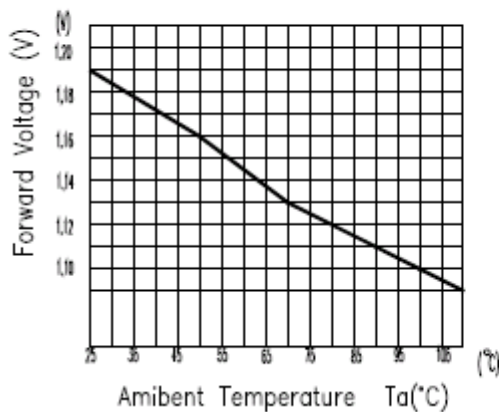
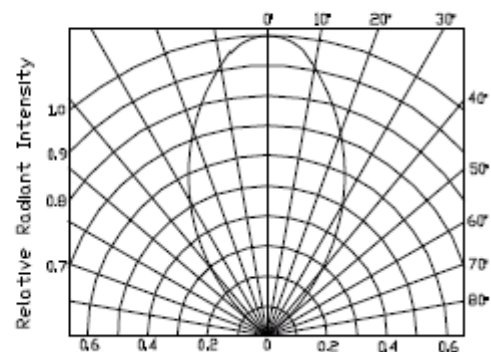
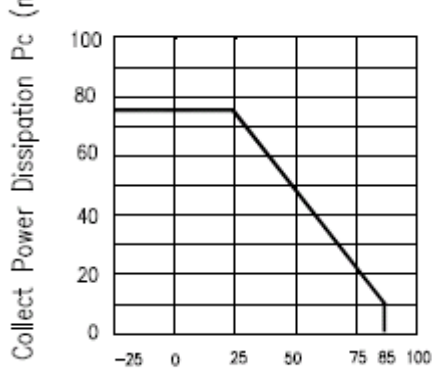


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



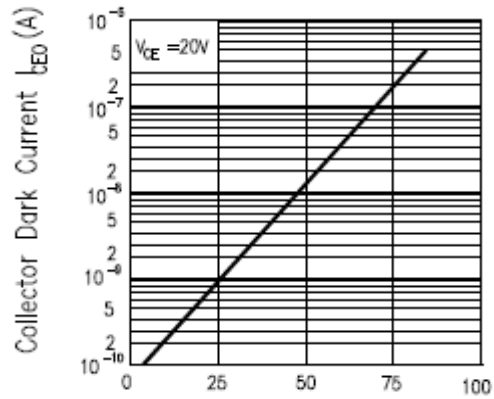
Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature



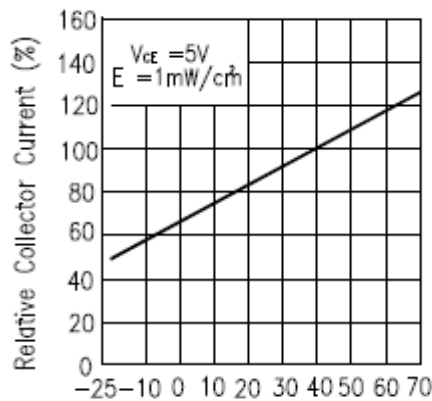
Ambient Temperature T_a (°C)

Fig.2 Collector Dark Current vs. Ambient Temperature



Ambient Temperature T_a (°C)

Fig. 3 Relative Collector Current vs. Ambient Temperature



Ambient Temperature T_a (°C)

Fig.4 Collector Current vs. Irradiance

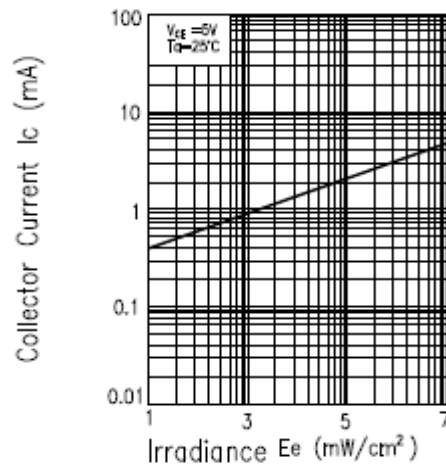


Fig.6 Collector Current vs. Collector-Emitter Voltage

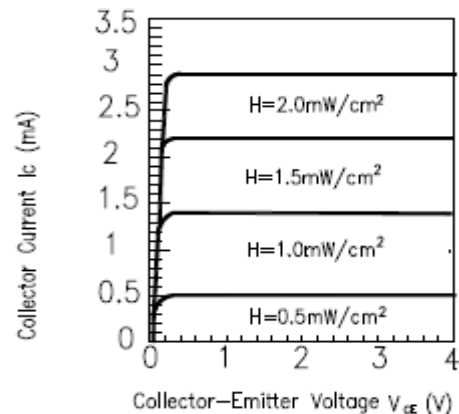
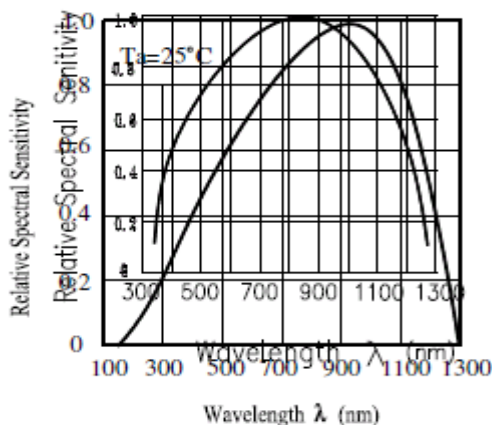
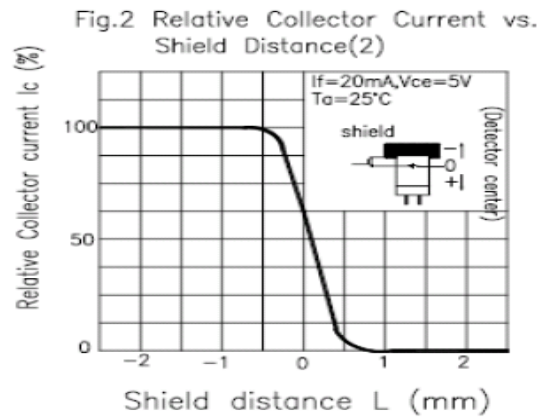
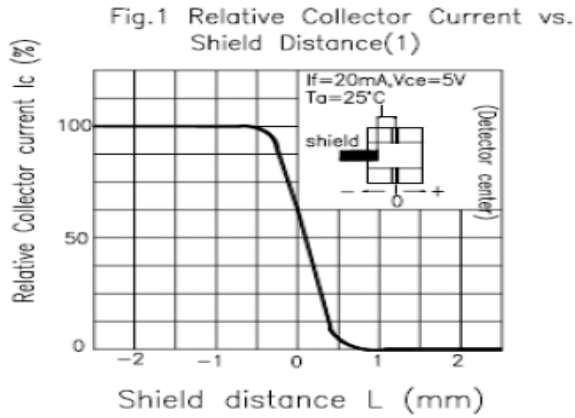


Fig.5 Spectral Sensitivity



Typical Electrical/Optical/Characteristics Curves for ITR



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: $260^\circ C \pm 5^\circ C$	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: $+100^\circ C$ 15 mins \updownarrow 5 min \updownarrow L: $-40^\circ C$ 15 min	300 cycle	22 pcs		0/1
3	Thermal Shock	H: $+100^\circ C$ 5 min \updownarrow 10 sec \updownarrow L: $-10^\circ C$ 5 min	300 cycle	22 pcs		0/1
4	High Temperature Storage	TEMP. : $+100^\circ C$	1000 hrs	22 pcs		0/1
5	Low Temperature Storage	TEMP. : $-40^\circ C$	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	$85^\circ C / 85\% R.H.$	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.
3. These specification sheets include materials protected under copyright of corporation. Please don't reproduce or cause anyone to reproduce them without Para light's consent.