

LG-ITR9707

DATA SHEET

SPEC.NO.: SZ18080411
DATE: 2018/08/04
REV. A/0

Approved By:

Checked By:

Prepared By:

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 LG-ITR9707 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 IRED only .This is the normal Situation. But when an object is in between , phototransistor could not receives the radiation.

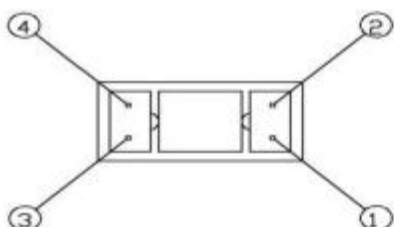
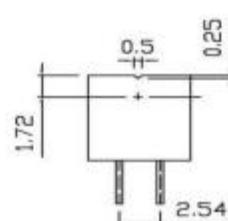
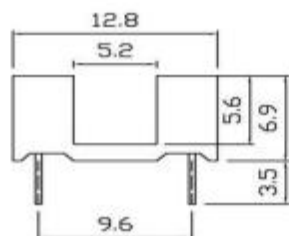
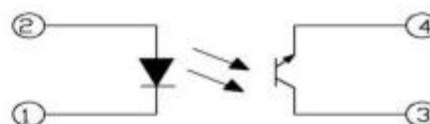
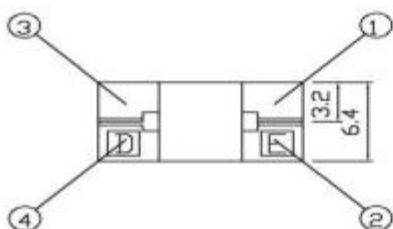
Applications

- . 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 Dimensions



Notes:

1. All dimensions are in millimeters.
2. Tolerances unless dimensions $\pm 0.3\text{mm}$.

- 1: Cathode
- 2: Anode
- 3: Collector
- 4: Emitter

Absolute Maximum Ratings (Ta=25℃)

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 $\leq 100\mu s$, Duty cycle=1%	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	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 from body for 5 seconds)		T_{sol}	260	°C

(*1) $t_w = 100 \mu s$, $T = 10 \text{ msec}$. (*2) $t = 5 \text{ Sec}$.

Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V_F	---	1.2	1.6	V	$I_F = 20 \text{ mA}$
	Reverse Current	I_R	---	---	10	μA	$V_R = 5 \text{ V}$
	Peak Wavelength	λ_P	---	940	---	nm	$I_F = 20 \text{ mA}$
Output	Collector Dark Current	I_{CEO}	---	---	100	nA	$V_{CE} = 10 \text{ V}$, $E_e = 0 \text{ mW/cm}^2$
	C-E Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	$I_C = 0.5 \text{ mA}$ $E_e = 10 \text{ mW/cm}^2$
	Collector Current	$I_C(ON)$	1.0	13.8	---	mA	$V_{CE} = 5 \text{ V}$ $I_F = 20 \text{ mA}$
Transfer Characteristic	Rise time	t_r	---	15	---	hsec	$V_{CE} = 5 \text{ V}$ $I_C = 1 \text{ mA}$ $R_L = 1 \text{ K}\Omega$
	Fall time	t_f	---	15	---	hsec	

Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs. Ambient Temperature

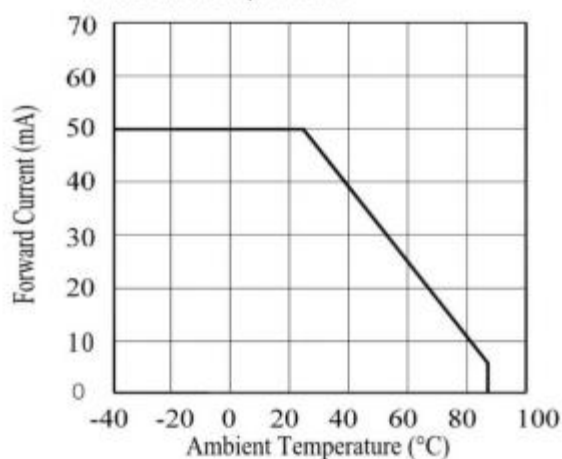


Fig.2 Spectral Distribution

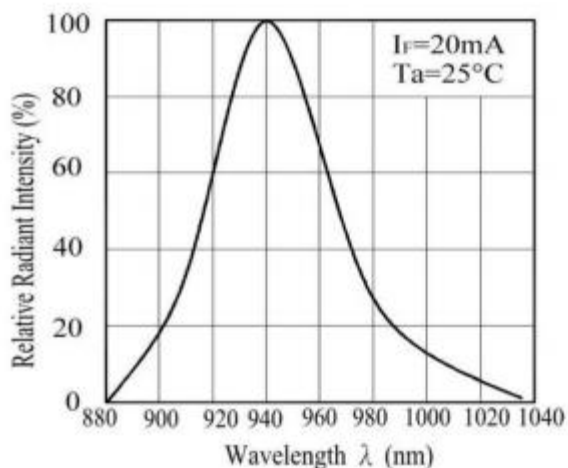


Fig.3 Forward Current vs. Forward Voltage

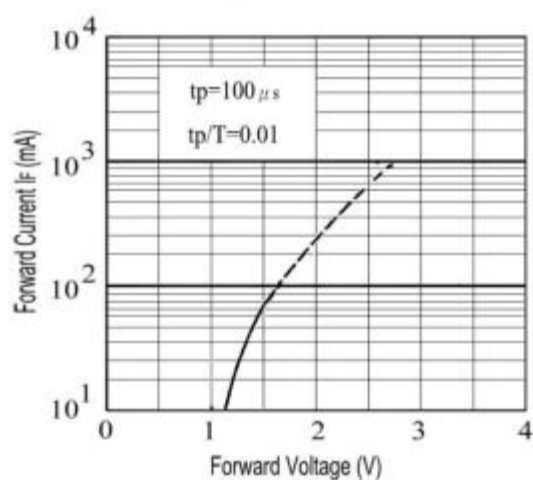
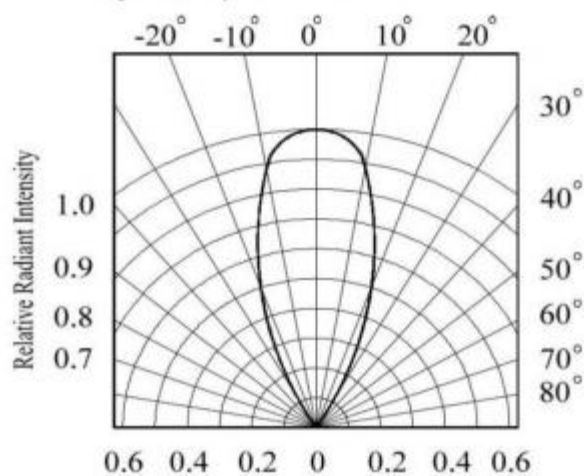


Fig. 4 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Spectral Sensitivity

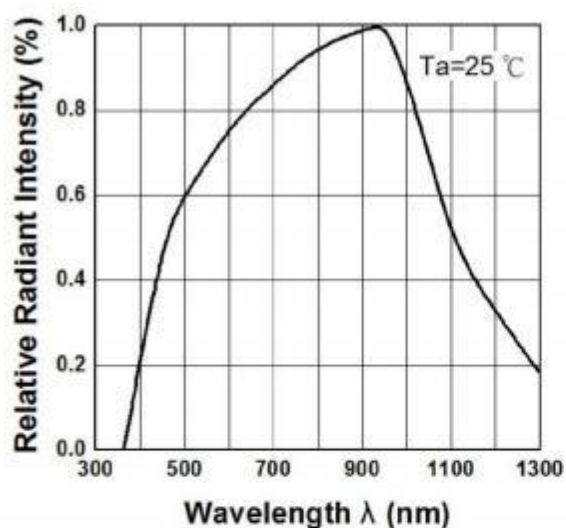


Fig.2 Collector Current vs. Irradiance

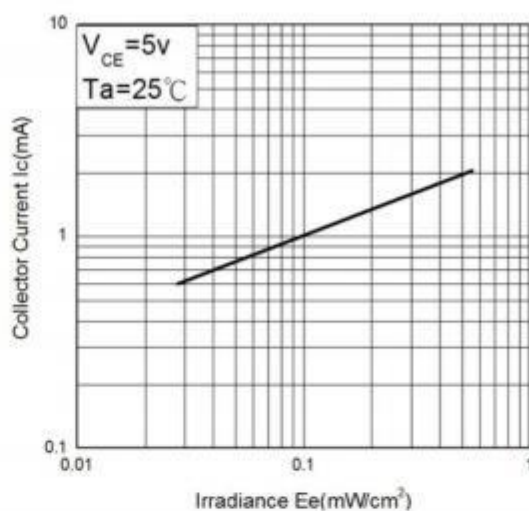


Fig.3 Collector Current vs. Collector-Emitter Voltage

