

LG-ITR2C-553924

DATA SHEET

SPEC.NO.: SZ19090505
DATE: 2019/09/09
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-ITR2C-553924 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.

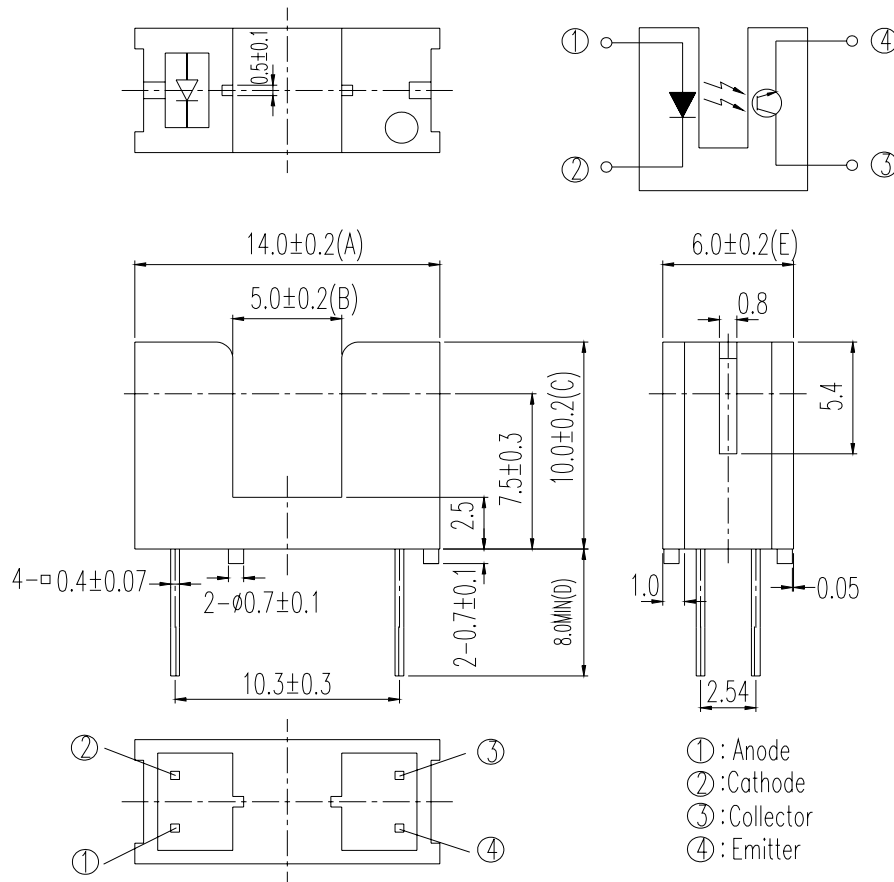
■ Applications

- 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 | Black |

Package Dimensions



Notes:

1. All dimensions are in millimeters.
2. Tolerances unless dimensions ± 0.25 mm.
3. Lead spacing is measured where the lead emerge from the package.

Absolute Maximum Ratings (Ta=25°C)

| Parameter | | Symbol | Ratings | Unit |
|------------------------------------------------------------------------|------------------------------------------------------------------|--------------------|---------|------|
| Input | Power Dissipation at (or below) 25°C Free Air Temperature | Pd | 100 | 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 | Topr | -20~+65 | °C |
| Storage Temperature | Tstg | -30~+70 | °C | |
| Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds) | Tsol | 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 _{F1} | --- | 1.2 | 1.6 | V | I _F =20mA |
| | | V _{F2} | --- | 1.4 | 1.85 | | I _F =100mA, tp=100 μs, tp/T=0.01 |
| | | V _{F3} | --- | 2.6 | 4.0 | | I _F =1A, tp=100 μs, tp/T=0.01 |
| | 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)} | 0.5 | --- | --- | mA | V _{CE} =5V, I _F =20mA |
| | Rise time | t _r | --- | 15 | --- | μsec | V _{CE} =5V |
| | Fall time | t _f | --- | 15 | --- | μsec | I _C =1mA, R _L =1KΩ |

Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs. Ambient Temperature

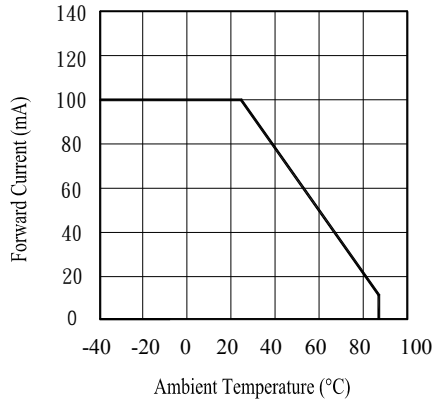


Fig.2 Spectral Distribution

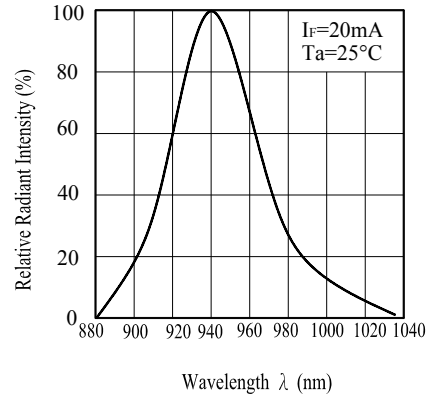


Fig.3 Relative Intensity vs. Forward Current

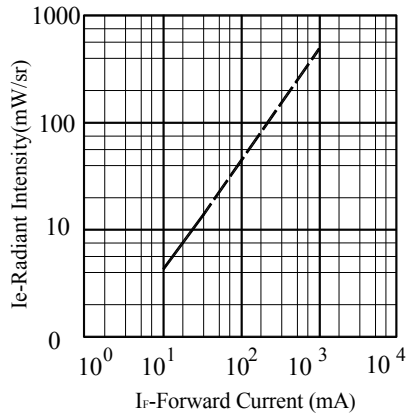


Fig.4 Relative Radiant Intensity vs. Angular Displacement

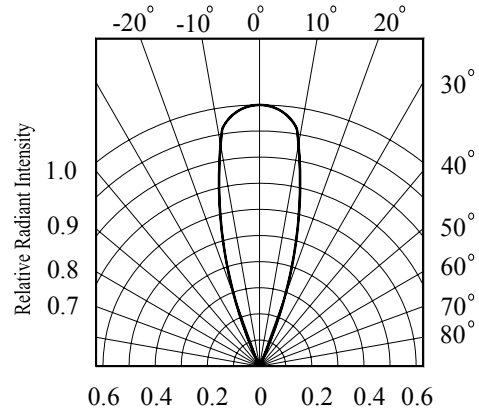


Fig.5 Relative Intensity vs. Ambient Temperature(°C)

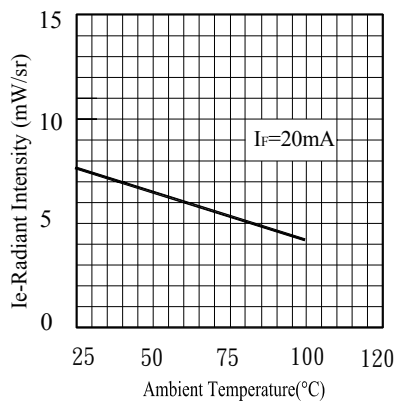
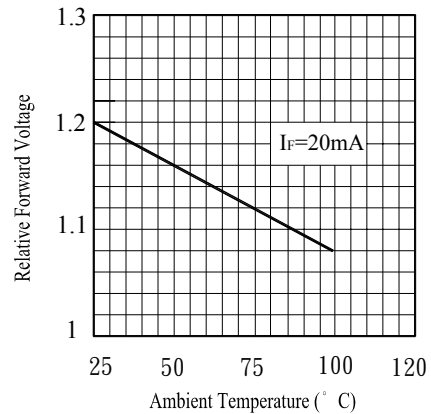


Fig.6 Forward Current vs. Ambient Temperature(°C)



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

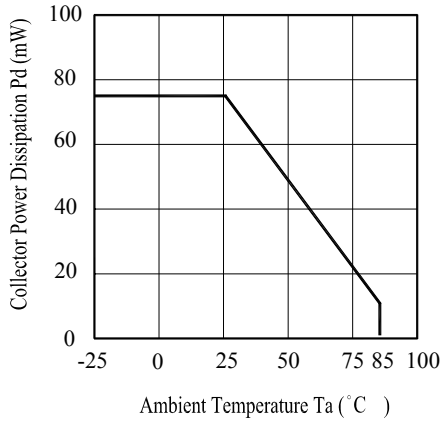


Fig.2 Spectral Sensitivity

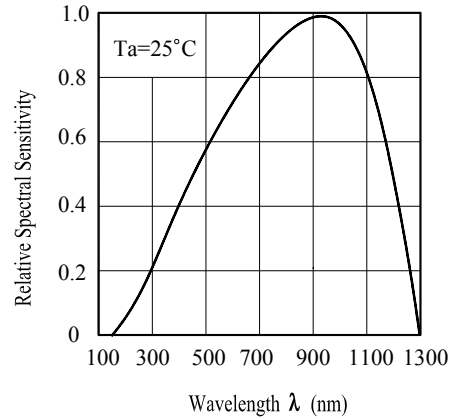


Fig.3 Relative Collector Current vs. Ambient Temperature

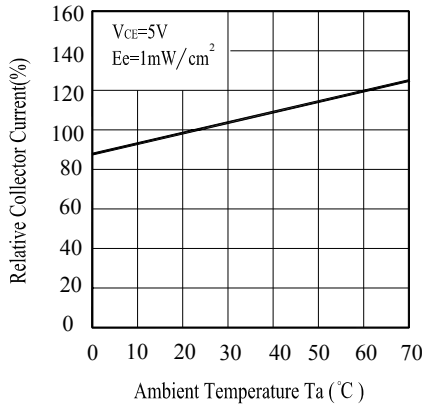


Fig.4 Collector Current vs. Irradiance

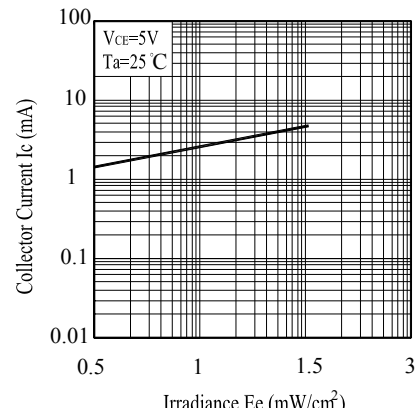


Fig.5 Collector Dark Current vs. Ambient Temperature

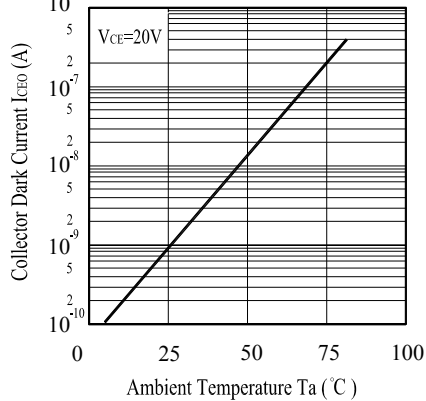


Fig.6 Collector Current vs. Collector-Emitter Voltage

