

ITR8102

Features

- Fast response time
- High analytic
- High sensitivity
- Pb free
- This product itself will remain within RoHS compliant version

Description

The **ITR8102** 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.

Applications

- Mouse Copier
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

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Device Selection Guide

| Device No. | Chip Material | LENS COLOR |
|------------|---------------|-------------|
| IR | GaAlAs | Water Clear |
| PT | Silicon | Water Clear |

Absolute Maximum Ratings (Ta=25)

| Parameter | | Symbol | Ratings | Unit |
|--|---|--------------------|---------|------|
| Input | Power Dissipation at(or below) 25 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 μ s, 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 | |
| Storage Temperature | | Tstg | -40~+85 | |
| Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds) | | Tsol | 260 | |

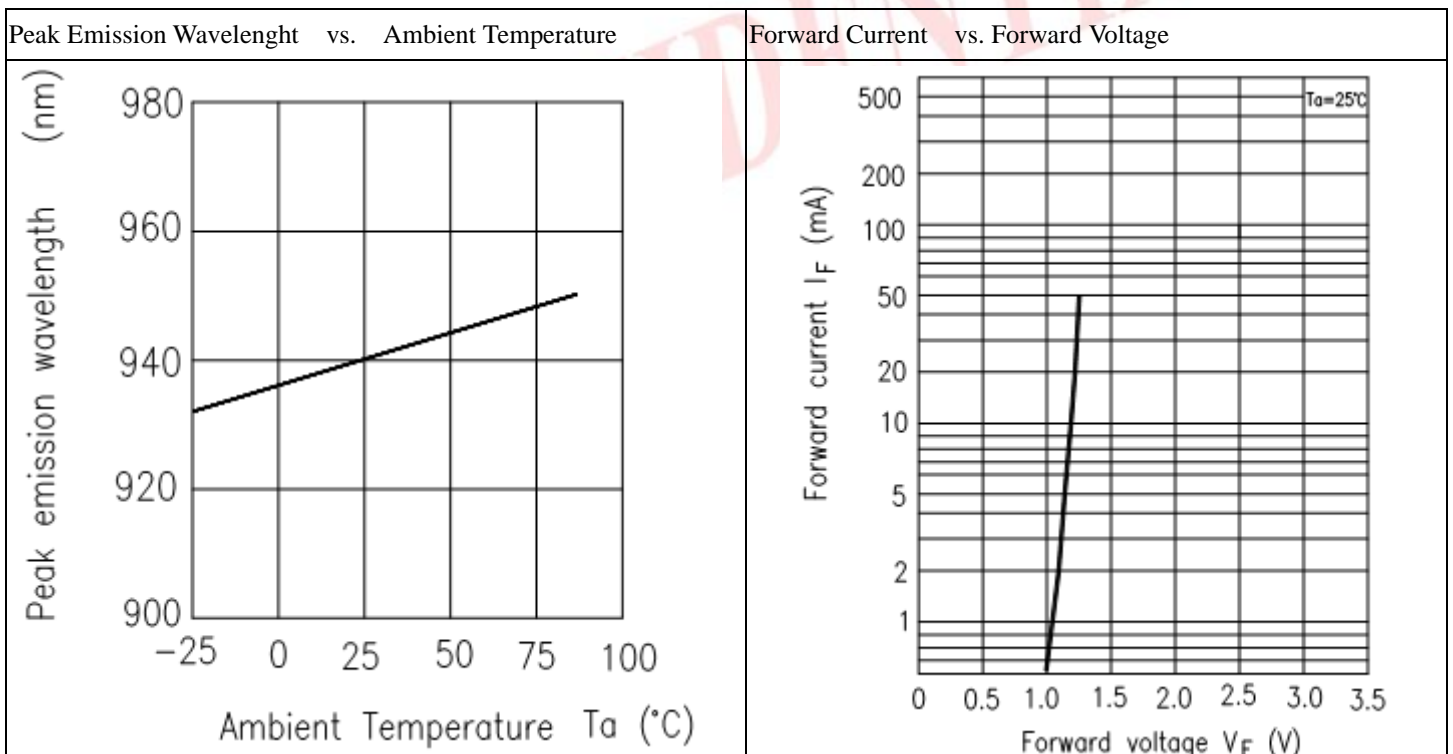
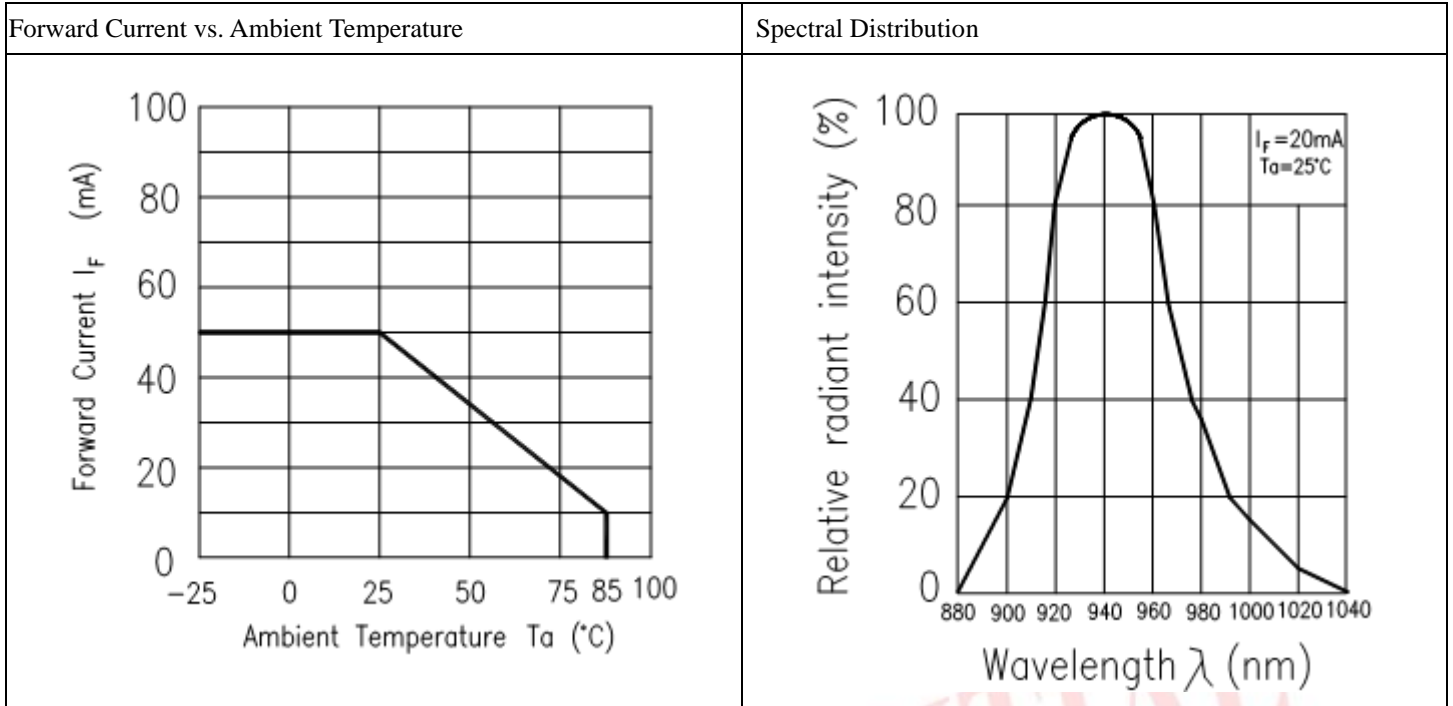
(* 1) tw=100 μ sec. , T=10 msec. (* 2) t=5 Sec

Electro-Optical Characteristics (Ta=25)

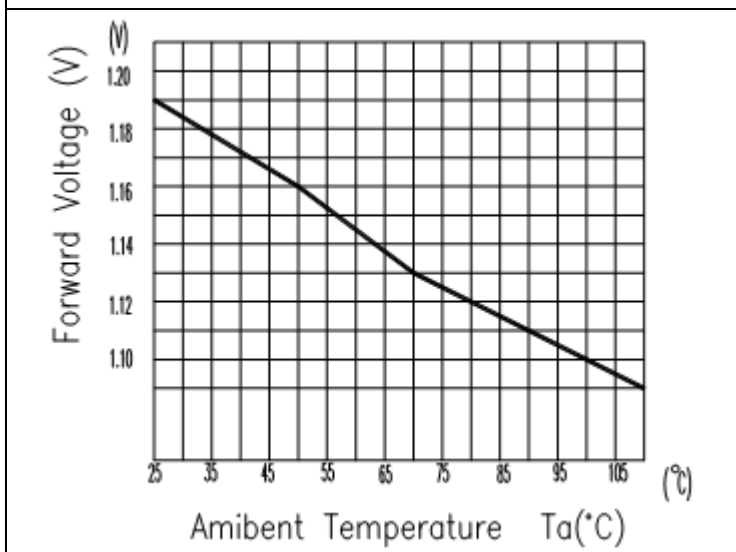
| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------|------------------------|----------------|------|------|------|-----------|-----------------------------|
| Input | Forward Voltage | V_F | --- | 1.2 | 1.5 | V | $I_F=20mA$ |
| | Reverse Current | I_R | --- | --- | 10 | μA | $V_R=5V$ |
| | Peak Wavelength | λ_p | --- | 940 | --- | nm | $I_F=20mA$ |
| | View Angle | 2 θ 1/2 | --- | 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 | $R_L=1K\Omega$ |

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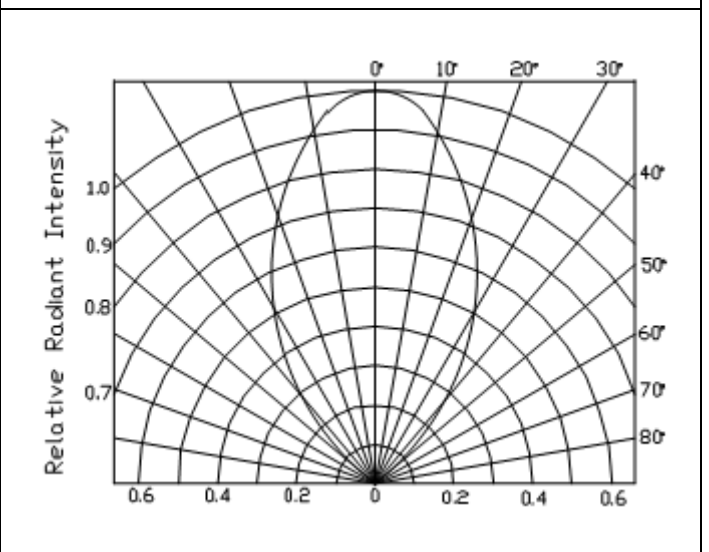
Typical Electrical/Optical/Characteristics Curves for IR



Forward Current vs. Ambient Temperature

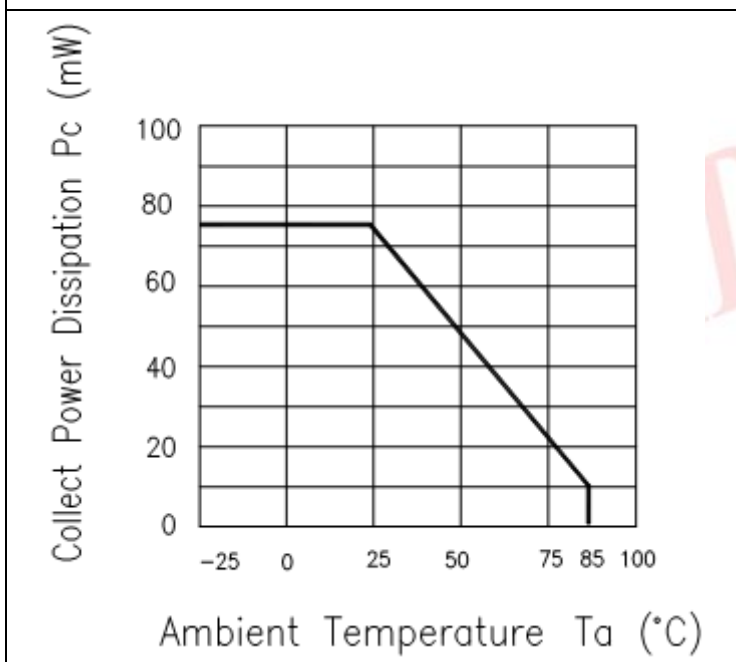


Relative Radiant Intensity vs. Angular Displacement

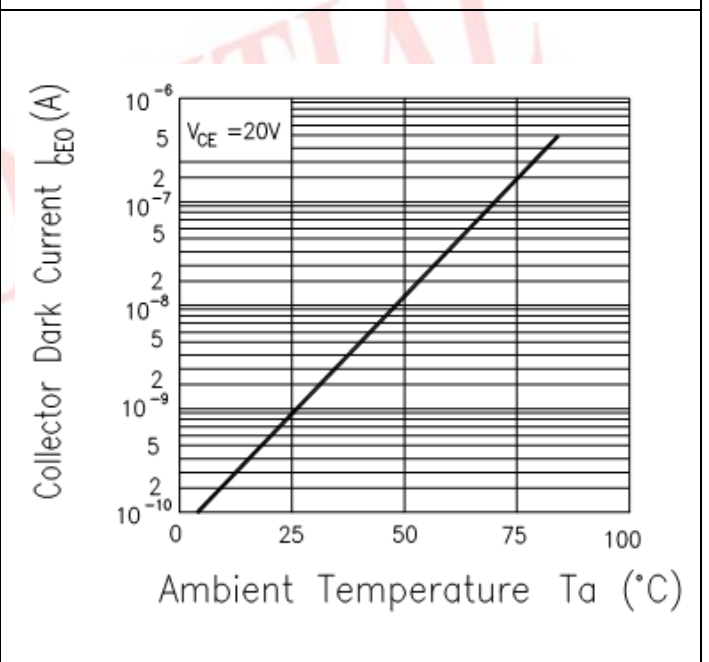


Typical Electro/Optical/Characteristics Curves for PT

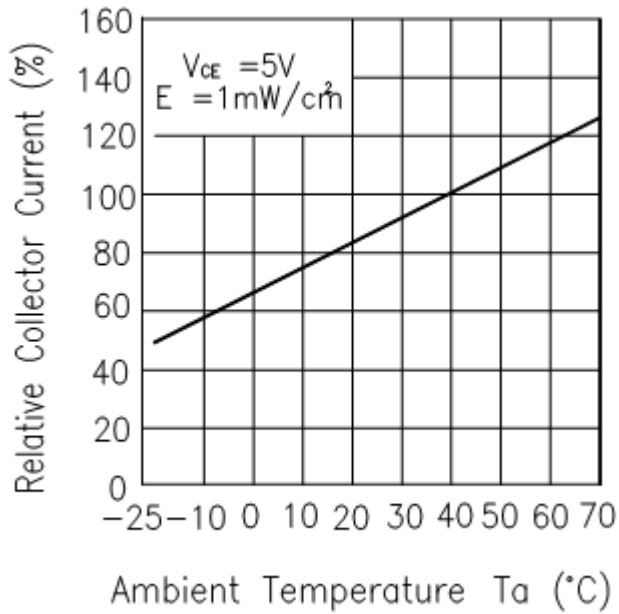
Collector Power Dissipation vs. Ambient Temperature



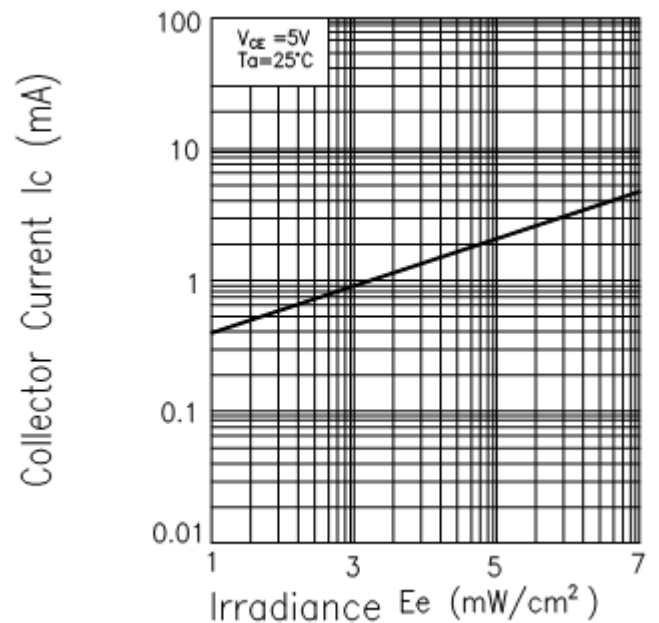
Spectral Sensitivity



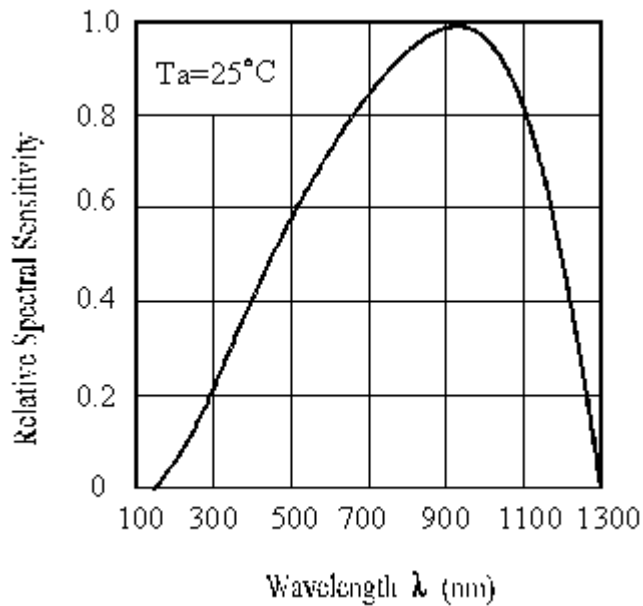
Relative Collector Current vs Ambient Temperature



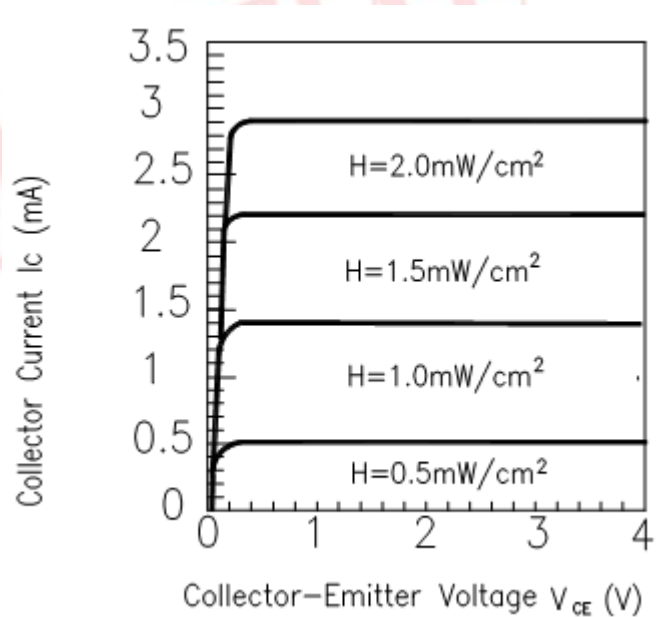
Collector Current vs. Irradiance



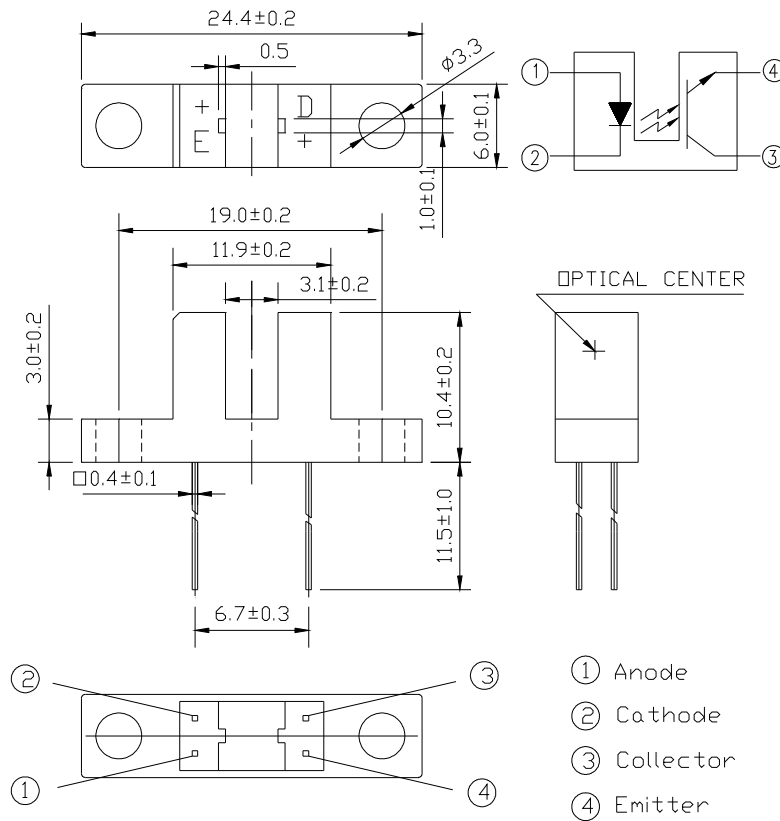
Spectral Sensitivity



Collector Current vs. Collector-emitter Voltage



Package Dimension



Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions ± 0.2 mm
3. Lead spacing is measured where the lead emerge from the package
4. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification
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Packing Quantity Specification

1. 20pcs/1Tube, 100Tubes/1Box
2. 4Boxes/1Carton

Label Form Specification



- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number
- X: Month
- Reference: Identify Label Number

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