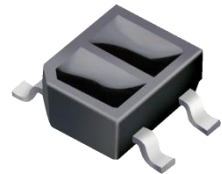


ITR8307-L24/TR8

Features

- Fast response time
- High sensitivity
- Cut-Off visible wavelength
- Thin
- Compact
- Pb free
- This product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).



Description

ITR8307-L24/TR8 is a light reflection switch which includes a GaAs IR-LED transmitter and a NPN photo-transistor with a high photosensitive receiver for short distance, operating in the infrared range. Both components are mounted side- by- side in a plastic package.

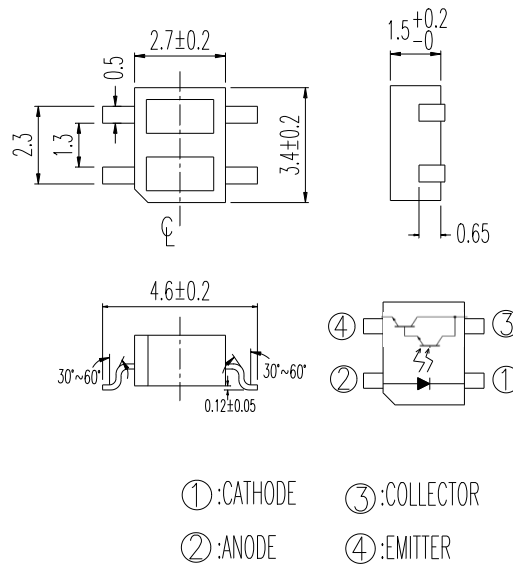
Applications

- Camera
- VCR
- Floppy disk driver
- Cassette type recorder
- Various microcomputer control equipment

Device Selection Guide

| Device No. | Chip Material |
|------------|---------------|
| IR | GaAlAs |
| PT | Silicon |

Package Dimensions



Absolute Maximum Ratings (Ta=25°C)

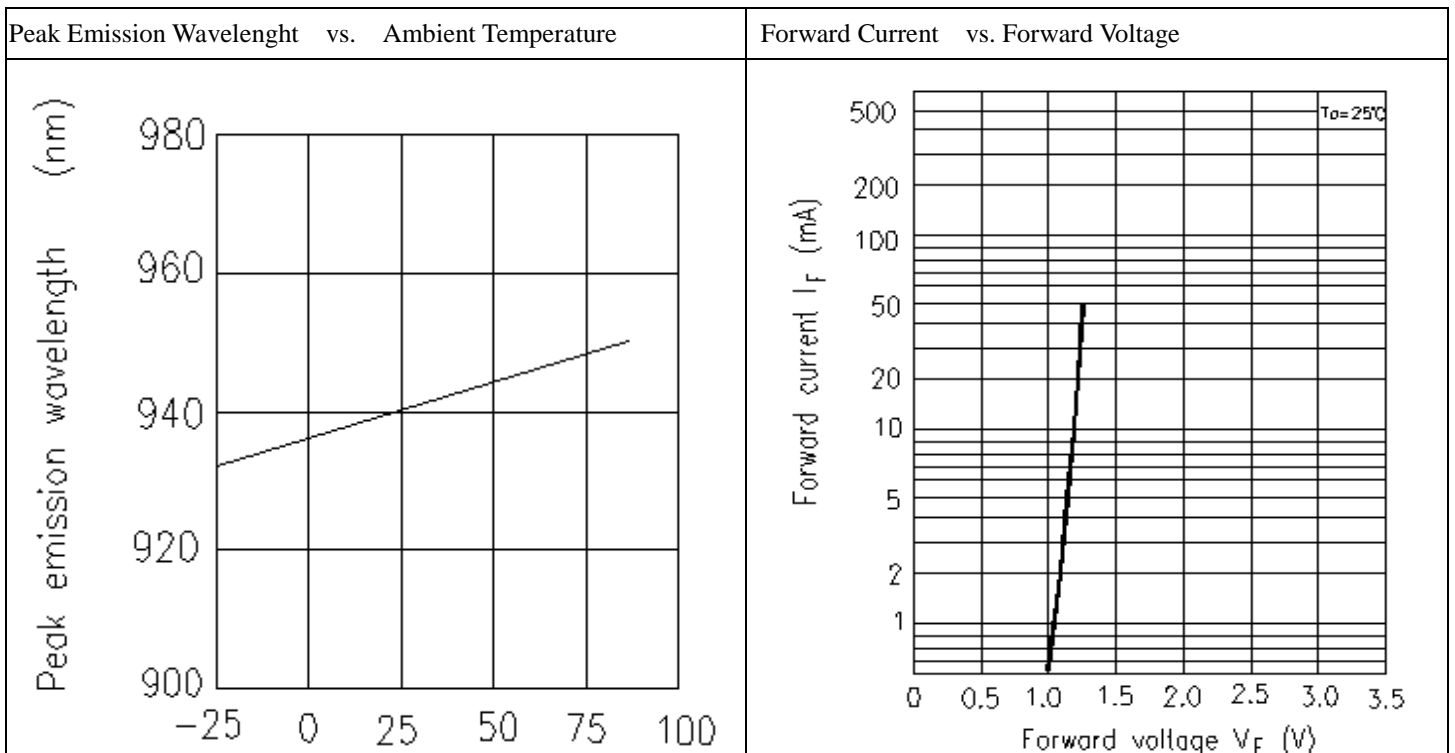
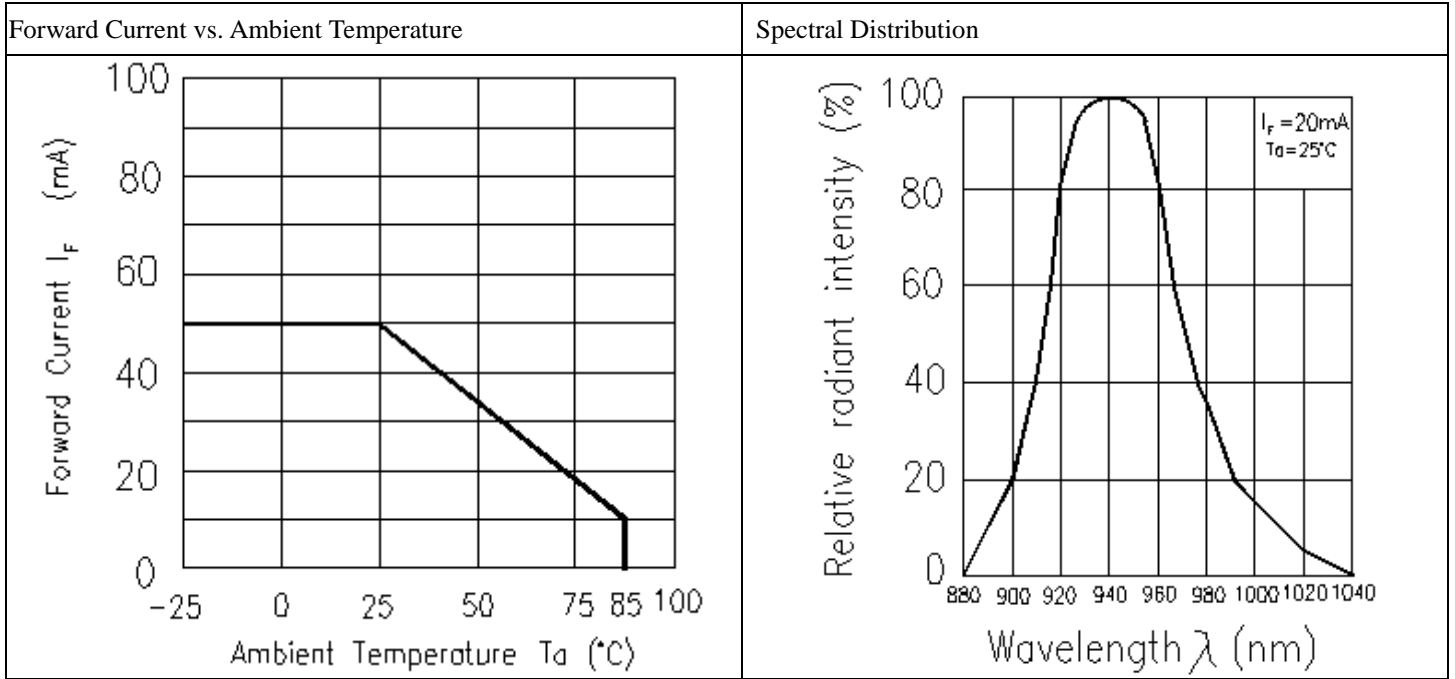
| Parameter | | Symbol | Rating | Unit |
|---------------------------------|---|--------------------|---------|------|
| Input | Power Dissipation at(or below) 25°C Free Air Temperature | Pd | 75 | mW |
| | Reverse Voltage | V _R | 5 | V |
| | Forward Current | I _F | 50 | mA |
| | Peak Forward Current (*1) Pulse width ≤ 100μs, Duty cycle=1% | I _{FP} | 1 | A |
| Output | Collector Power Dissipation | P _C | 75 | mW |
| | 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 | -40~+85 | °C |
| Storage Temperature | | Tstg | -40~+90 | °C |
| Lead Soldering Temperature (*2) | | Tsol | 260 | °C |

Notes: (* 1) tw=100 μsec. , T=10 msec. (* 2) t=5 Sec

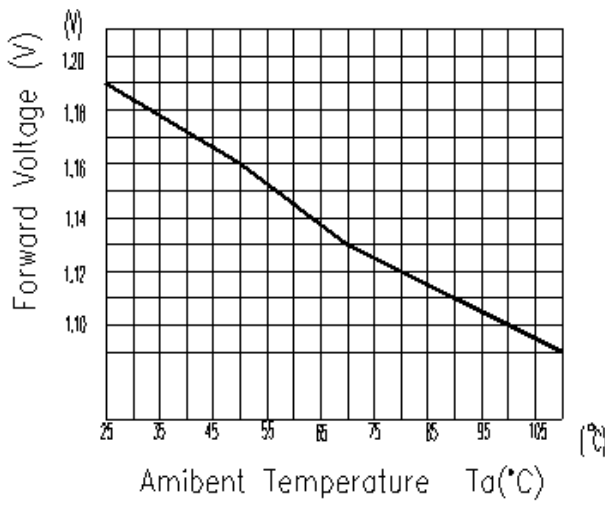
Electro-Optical Characteristics (Ta=25°C)

| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Condition |
|--------------------------|------------------------|---------------|------|------|------|-----------|---|
| Input | Forward Voltage | V_F | --- | 1.2 | 1.6 | V | $I_F=20mA$ |
| | Reverse Current | I_R | --- | --- | 10 | μA | $V_R=5V$ |
| | Peak Wavelength | λ_p | --- | 940 | --- | nm | --- |
| Output | Dark Current | I_{CEO} | --- | --- | 100 | nA | $V_{CE}=10V$ |
| | C-E Saturation Voltage | $V_{CE(sat)}$ | --- | --- | 1 | V | $I_C=2mA$ $E_e=1mW/cm^2$ |
| Transfer Characteristics | Light Current | $I_C(ON)$ | 0.5 | --- | 15.0 | mA | $V_{CE}=2V$ $I_F=4mA$ |
| | Leakage Current | I_{CEOD} | --- | --- | 5 | μA | $V_{CE}=2V$ $I_F=4mA$ |
| | Rise time | t_r | --- | 20 | --- | μsec | $V_{CE}=2V$ $I_C=0.1mA$ $R_L=1K\Omega, d=1mm$ |
| | Fall time | t_f | --- | 20 | --- | μsec | |

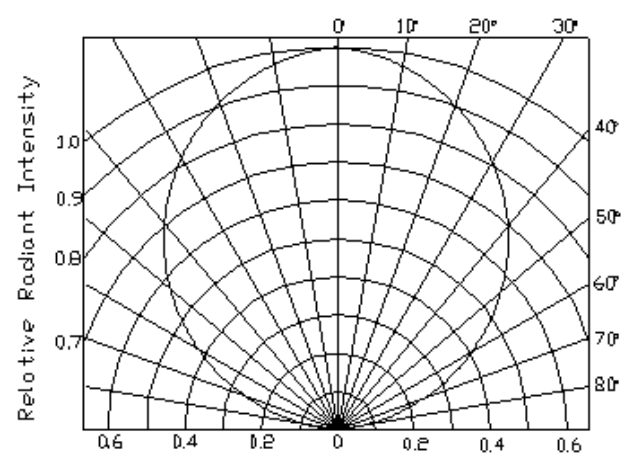
Typical Electrical/Optical/Characteristics Curves for IR



Forward Voltage vs. Ambient Temperature

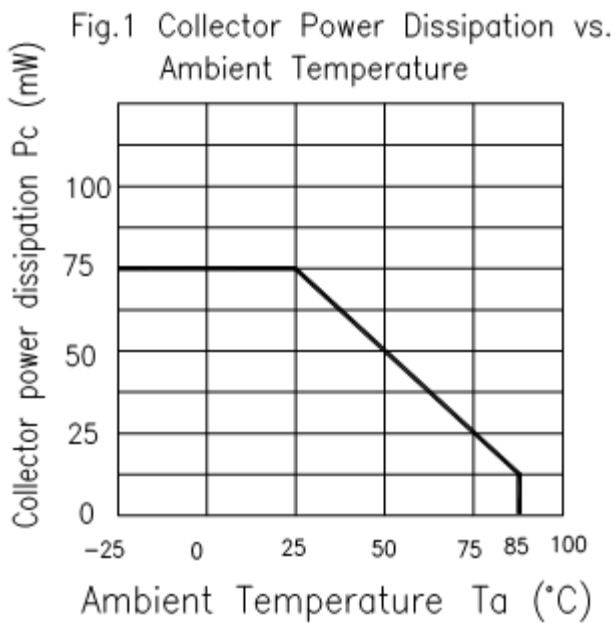


Relative Radiant Intensity vs. Angular Displacement

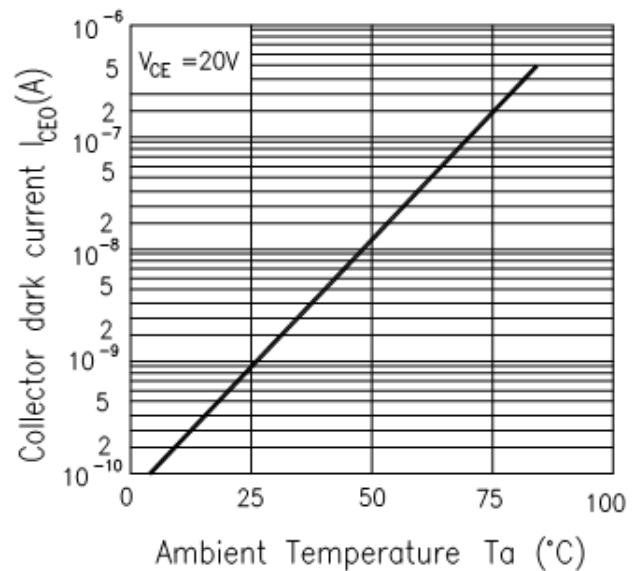


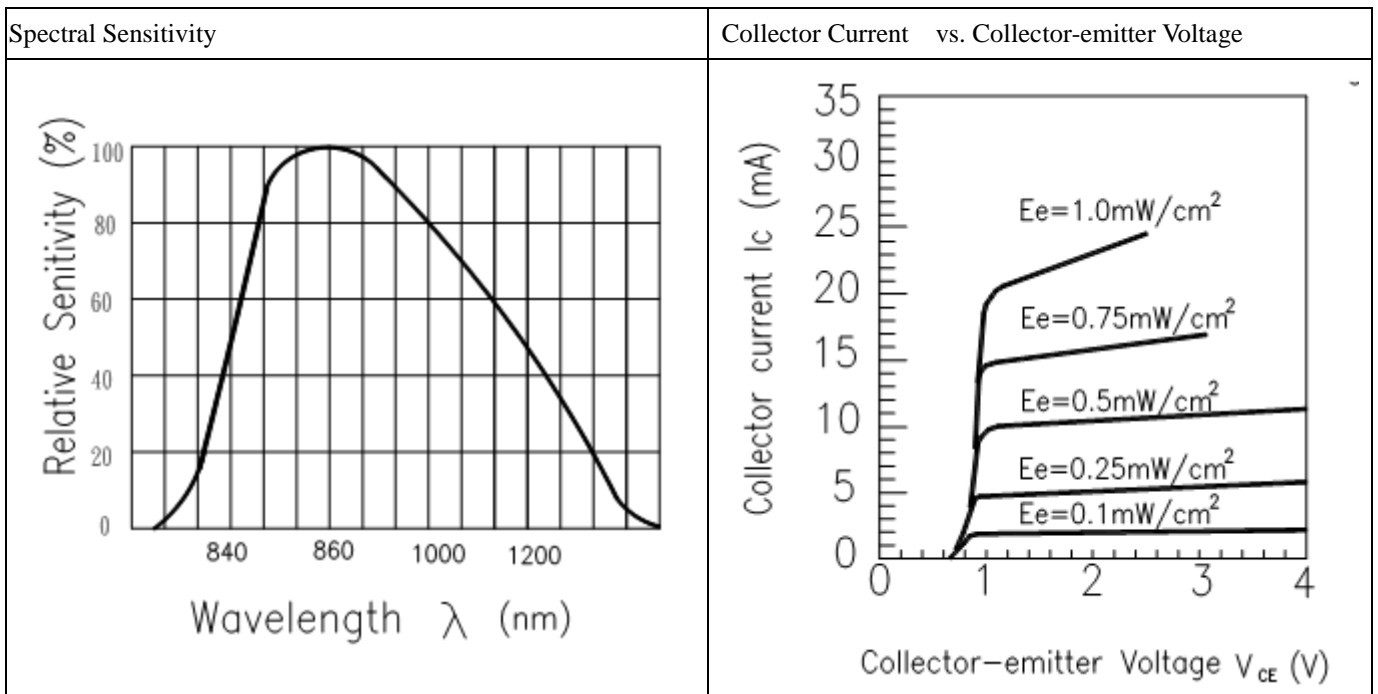
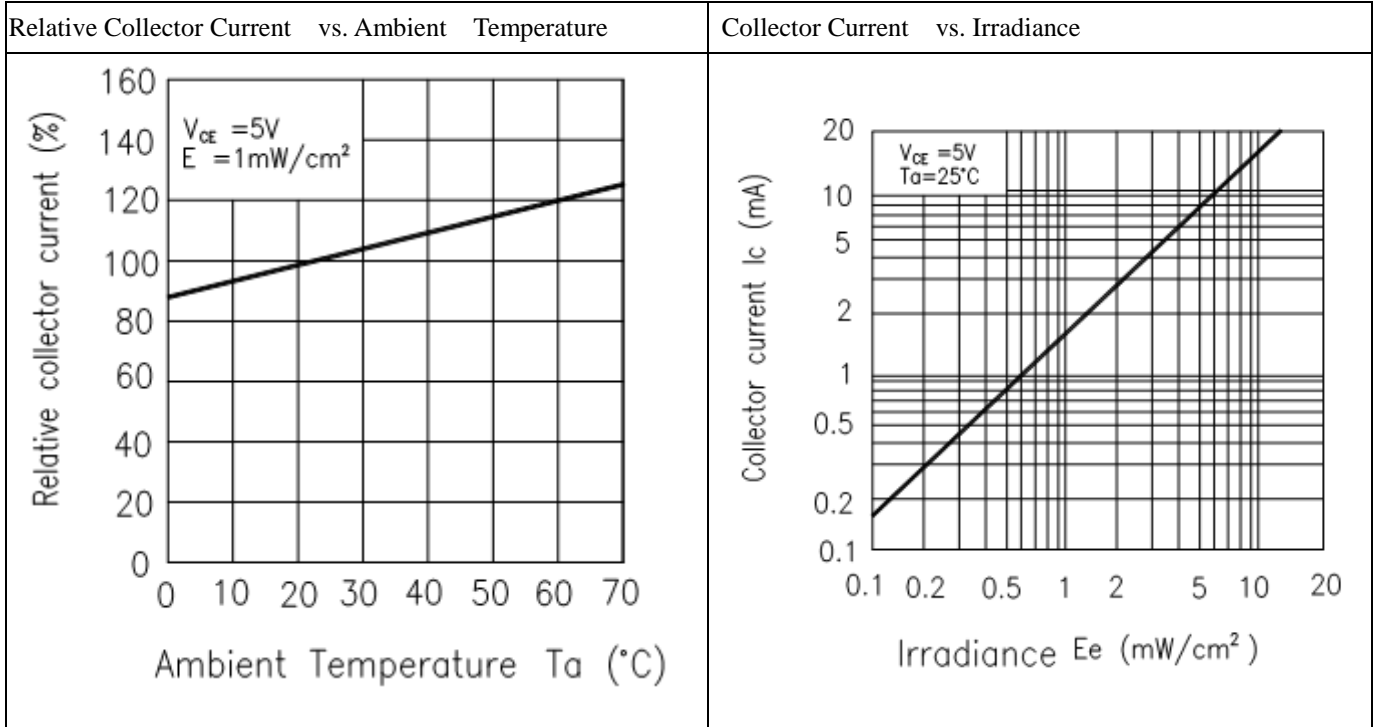
Typical Electro/Optical/Characteristics Curves for PT

Collector Power Dissipation vs. Ambient Temperature

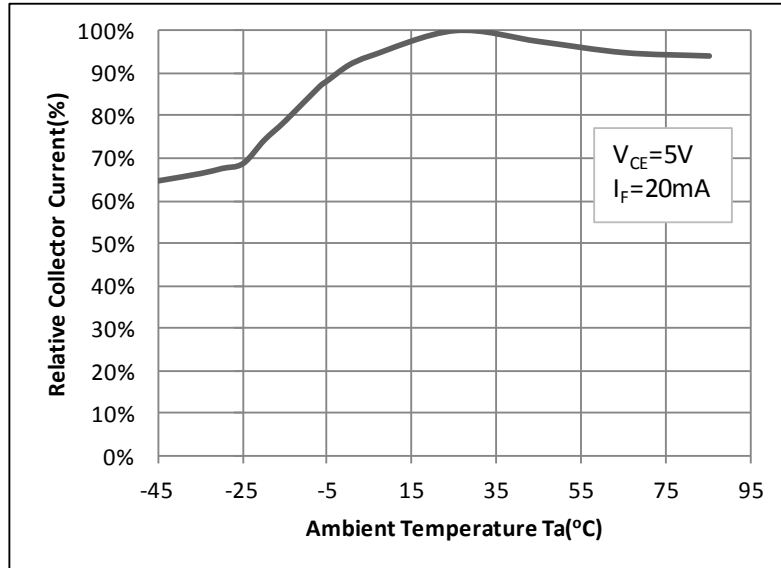


Collector Dark Current vs. Ambient Temperature



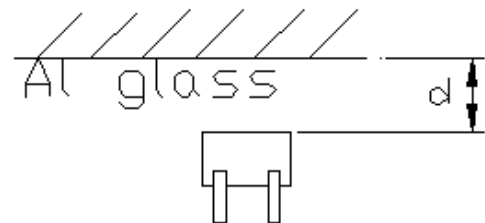
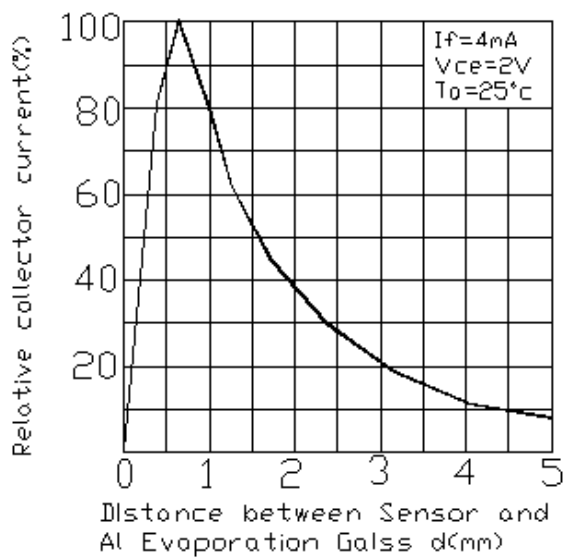


Ambient Temperature vs. Collector Current

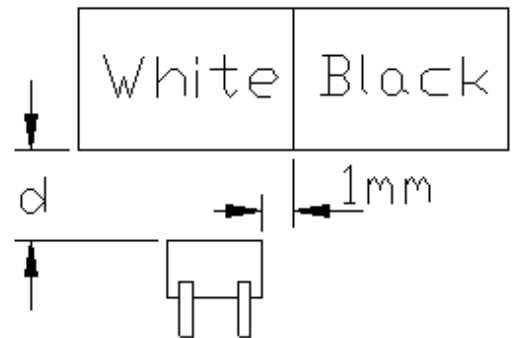
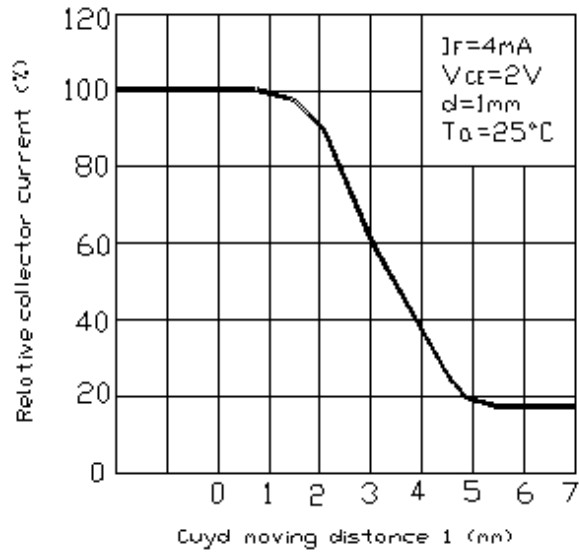


Typical Electrical/Optical/Characteristics Curves For ITR

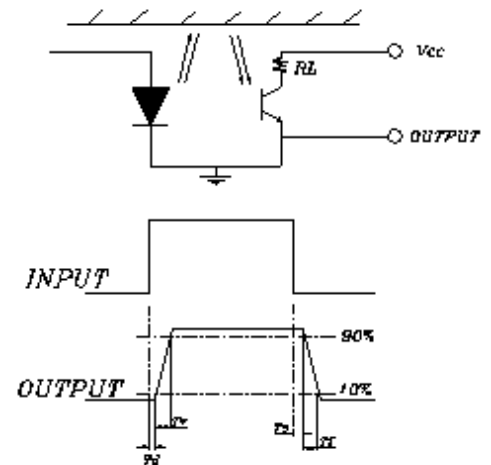
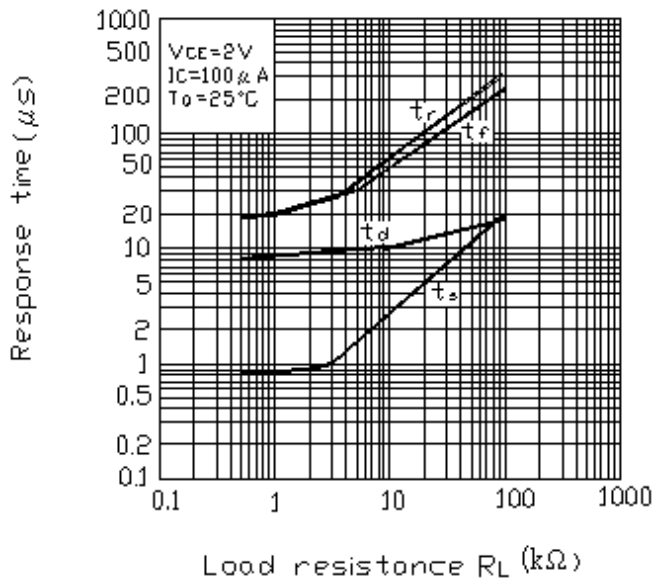
Relative Collector Current vs. Distance between Sensor and AL Evaporation Galss.



Relative Collector Current vs. Card Moving Distance



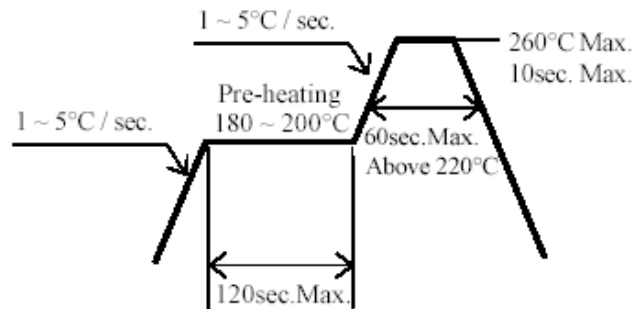
Response Time vs. Load Resistance



Recommended Method of Storage

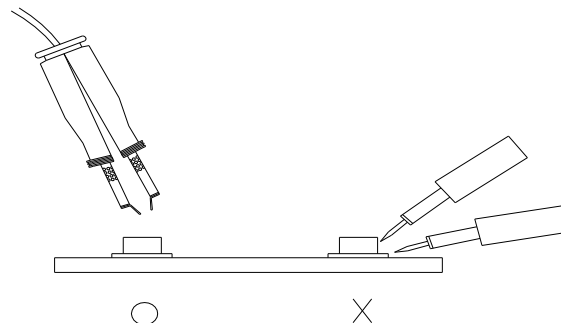
The following are general recommendations for moisture sensitive level (MSL) 4 storage and use:

- Shelf life in sealed bag: 12 months at $< 40\text{ }^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH)
- After bag is opened, devices that will be subjected to reflow solder or other high temperature process must
 - a) Mounted within 72 hours of factory conditions $< 30\text{ }^{\circ}\text{C}/60\%$ RH, or
 - b) Stored at $< 20\%$ RH
- Devices require bake, before mounting, if:
Humidity Indicator Card is $> 20\%$ when read at $23 \pm 5\text{ }^{\circ}\text{C}$
- If baking is required, devices may be baked:
 - a) 192 hours at $40\text{ }^{\circ}\text{C}$, and $< 5\%$ RH (dry air/nitrogen) or
 - b) 96 hours at $60\text{ }^{\circ}\text{C}$, and $< 5\%$ RH for all device containers
 - c) 24 hours at $125\text{ }^{\circ}\text{C}$
- Soldering Condition
 - a) Pb-free solder temperature profile

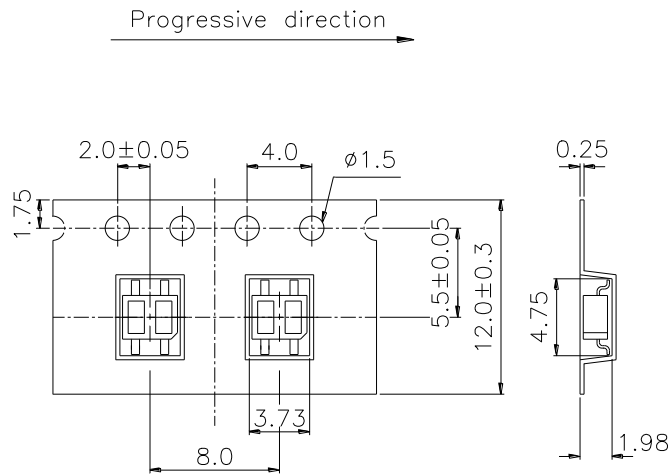


- b) Reflow soldering should not be done more than two times.
 - c) When soldering, do not put stress on the LEDs during heating.
 - d) After soldering, do not warp the circuit board.
- Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

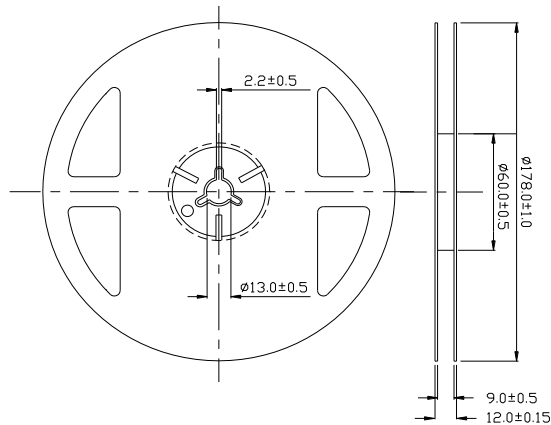


Taping Dimension



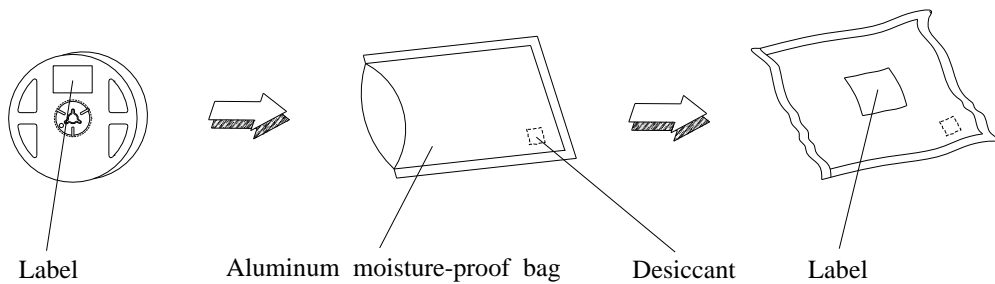
General Tolerance ± 0.1
UNIT:mm

Reel Dimensions



Note: The tolerances unless mentioned is ± 0.1 mm ,Unit = mm

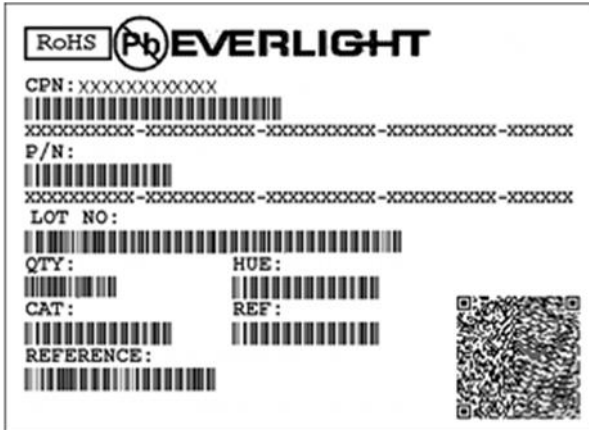
Moisture Resistant Packaging



Packing Quantity Specification

1. 1000 Pcs/ 1Reel
2. 15 Reel /1 Box
3. 2 Box/ 1 Carton

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

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT 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 EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.