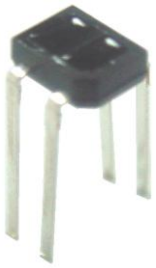
DATASHEET

# ITR8307/F43



## 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 < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)

## Description

**ITR8307/F43** is a light reflection switch which includes a GaAs IR-LED transmitter and a NPN photo-transistor with a high sensitive 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** | GaAs |
| **PT** | Silicon |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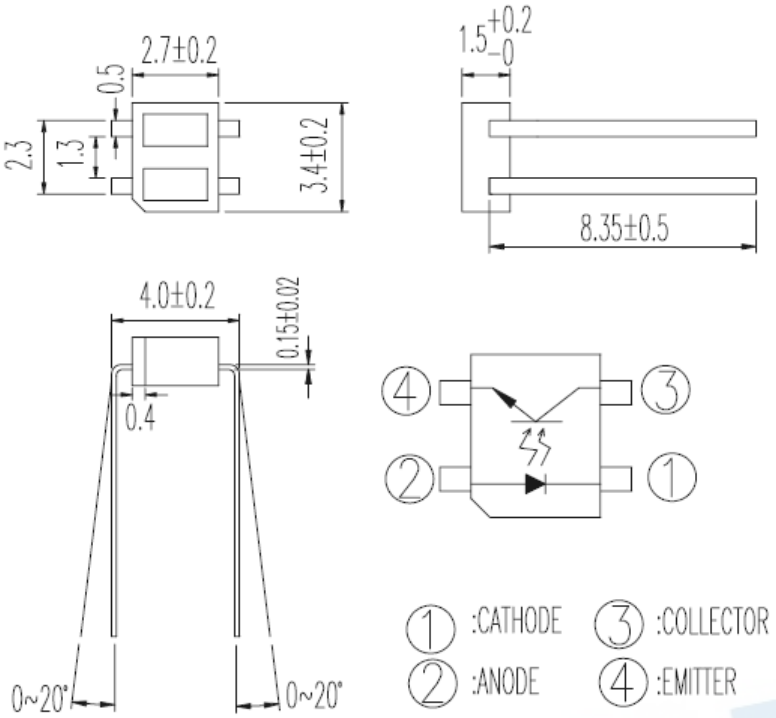
## Package Dimensions




- Notes:
  1. All dimensions are in millimeters
  2. Tolerances unless dimensions ±0.15mm

## 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) | $I_{FP}$ | 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 | -25~+85 | ℃ |
| **Storage Temperature** | | Tstg | -30~+100 | ℃ |
| **Lead Soldering Temperature (*2)** | | Tsol | 260 | ℃ |

- Notes:
  (*1) tw=100 μsec., T=10 msec.
  (*2) t=5 Sec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## Electro-Optical Characteristics (Ta=25℃)

| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|---|
| **Input** | Forward Voltage | $V_F$ | – | 1.2 | 1.6 | V | $I_F$=20mA |
| | Reverse Current | $I_R$ | – | – | 10 | μA | $V_R$=6V |
| | Peak Wavelength | $\lambda_P$ | – | 940 | – | nm | $I_F$=20mA |
| **Output** | Dark Current | $I_{CEO}$ | – | – | 100 | nA | $V_{CE}$=10 V, Ee=0 mW/cm$^2$ |
| **Transfer Characteristics** | Collect Current | $I_C$(ON) | 0.1 | – | – | mA | $V_{CE}$=5V $I_F$=20mA |
| | Leakage Current | $I_{CEOD}$ | – | – | 1 | nA | $V_{CE}$=5V $I_F$=20mA |
| | Rise time | tr | – | 20 | – | μs | $V_{CE}$=2V, $I_C$=0.1mA, RL=1kΩ, d=1mm |
| | Rise time | tf | – | 20 | – | μs | |

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## Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

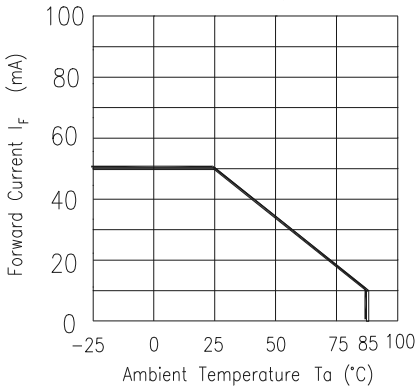



Fig. 2 Spectral Distribution

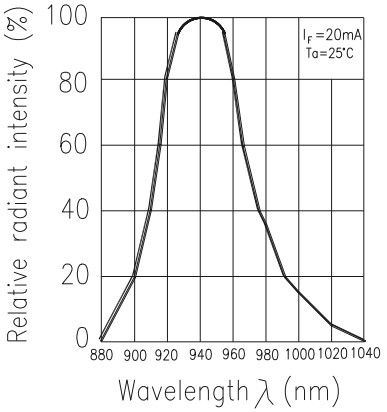



Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

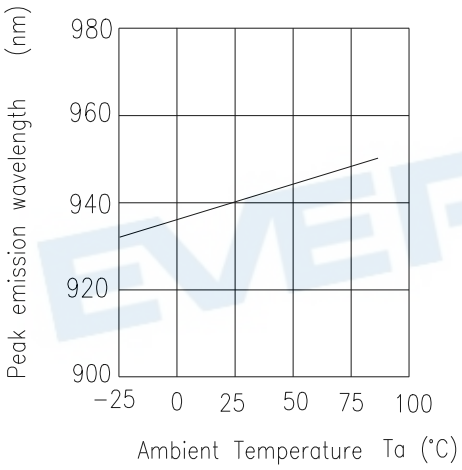



Fig. 4 Forward Current vs. Forward Voltage

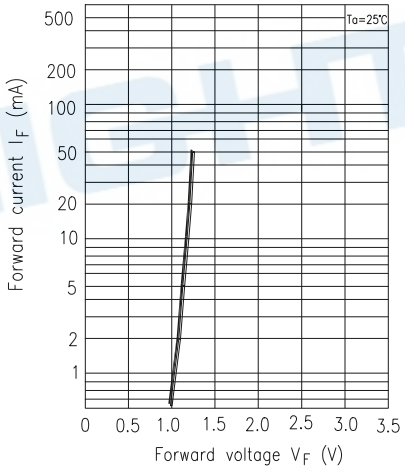



Fig. 5 Forward Voltage vs. Ambient Temperature

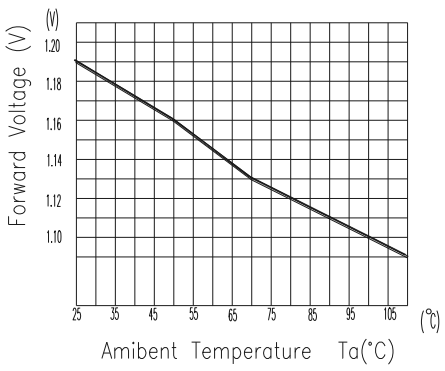
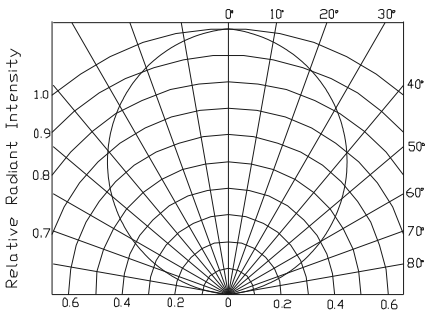



Fig. 6 Relative Radiant Intensity vs. Angular Displacement





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# Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

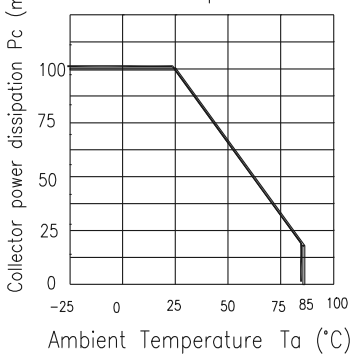



Fig.2 Collector Dark Current vs. Ambient Temperature

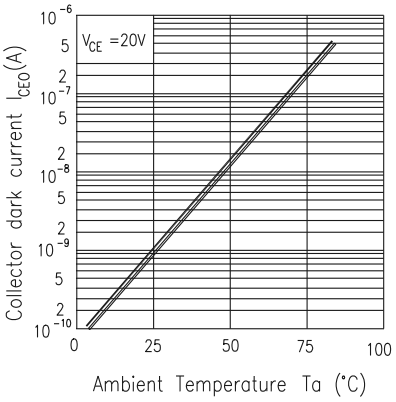



Fig. 3 Relative Collector Current vs. Ambient Temperature

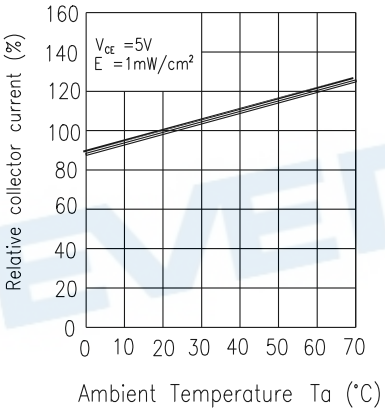



Fig.4 Collector Current vs. Irradiance

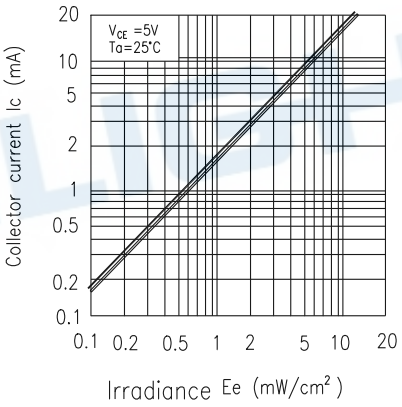



Fig.5 Spectral Sensitivity

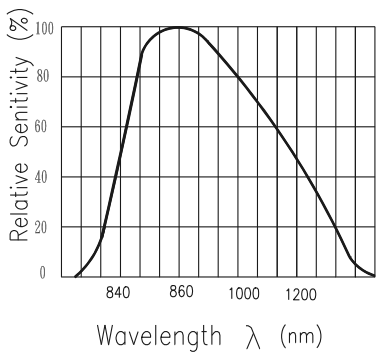
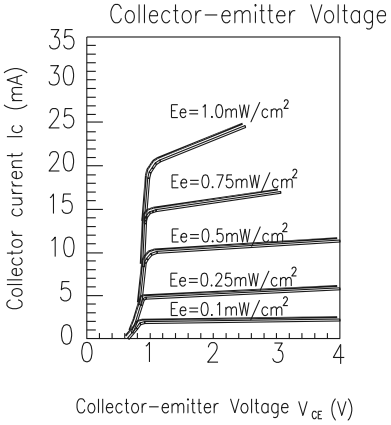



Fig.6 Collector Current vs. Collector-emitter Voltage





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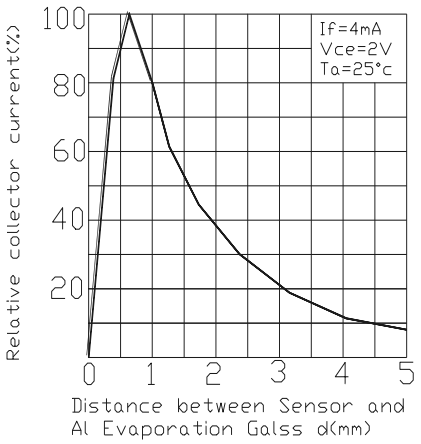
# Typical Electrical/Optical/Characteristics Curves for ITR

Fig.1 Relative Collector Current vs. Distance between Sensor and Al Evaporation Galss



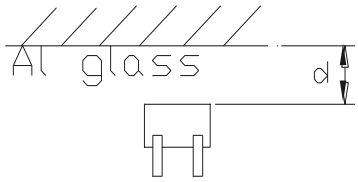
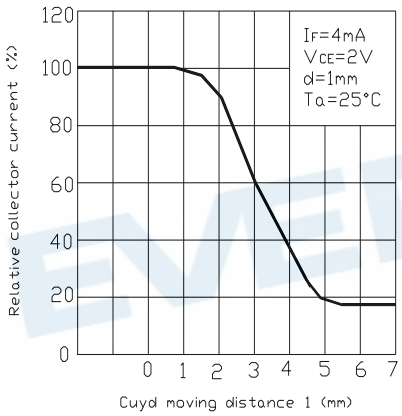




Fig.2 Relative Collector Current vs. Card Moving Distance (1)



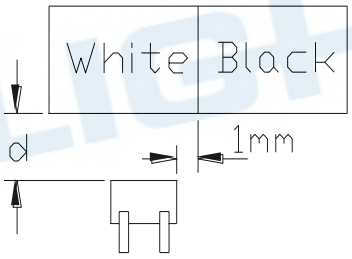
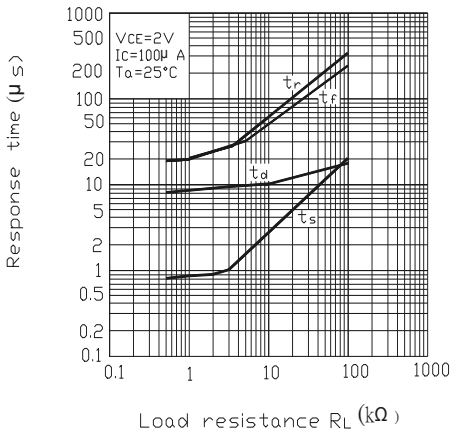
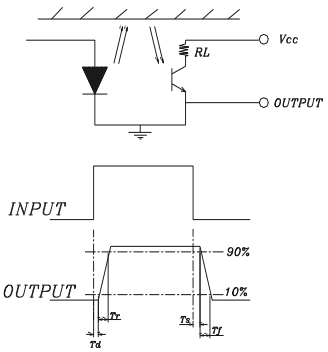




Fig.3 Response Time vs. Load Resistance





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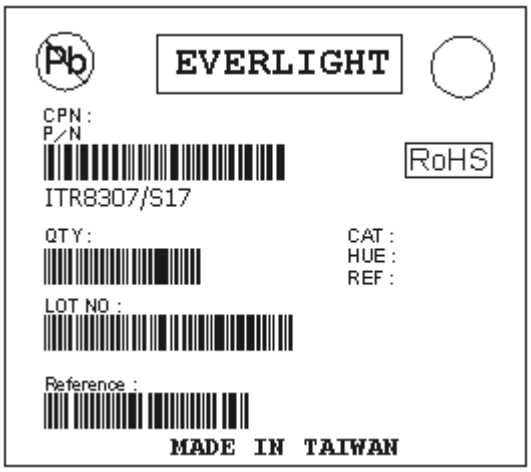
## Packing Quantity Specification

1. 160 Pcs/ Per Tube
2. 18 Tubes / Inner Carton
3. 12 Inner Cartons / Outside Carton

## Label Form Specification




CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Peak Wavelength
REF: Reference
LOT No: Lot Number
MADE IN TAIWAN: Production Place

## DISCLAIMER

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2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
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