

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($Br < 900\text{ppm}$, $Cl < 900\text{ppm}$, $Br+Cl < 1500\text{ppm}$)

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.

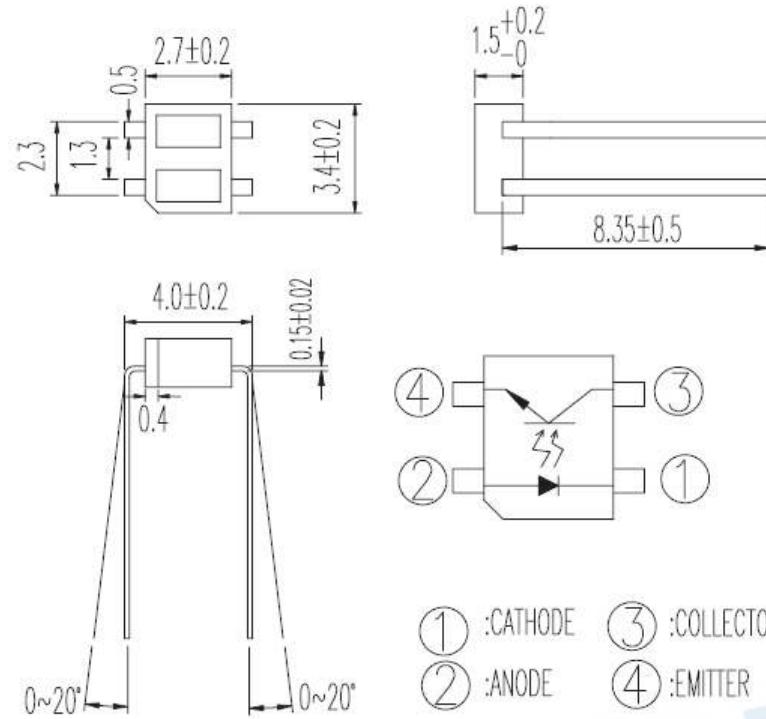
Applications

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

Device Selection Guide

Device No.	Chip Material
IR	GaAs
PT	Silicon

Package Dimensions



- Notes:

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

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Ratings	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)	I _{FP}	1	A
Output	Collector Power Dissipation	P _C	75	mW
	Collector Current	I _C	50	mA
	Collector-Emitter Voltage	V _{CCEO}	30	V
	Emitter-Collector Voltage	V _{ECO}	5	V
Operating Temperature		T _{opr}	-25~+85	°C
Storage Temperature		T _{stg}	-30~+100	°C
Lead Soldering Temperature (*2)		T _{sol}	260	°C

- Notes:

(*1) $t_w=100$ μsec., $T=10$ msec.

(*2) $t=5$ Sec

Electro-Optical Characteristics (Ta=25°C)

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	λ _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	

Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

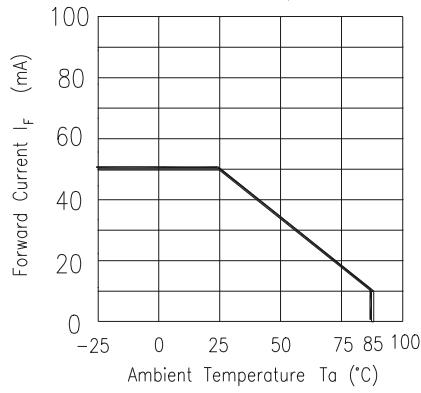


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

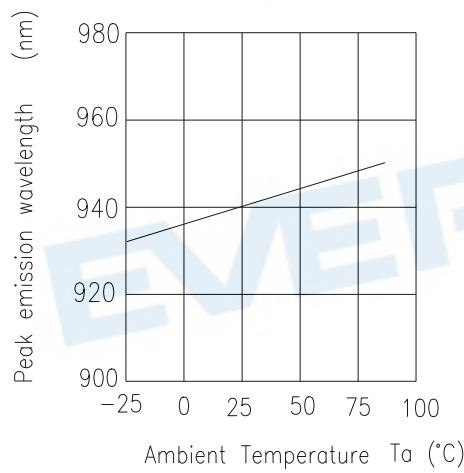


Fig. 5 Forward Voltage vs. Ambient Temperature

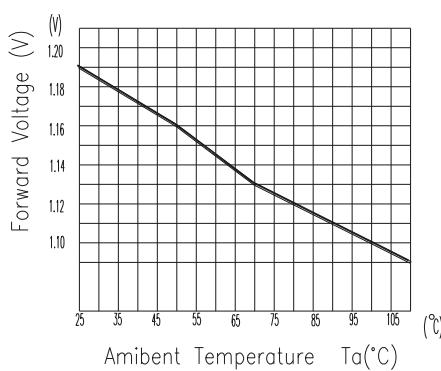


Fig. 2 Spectral Distribution

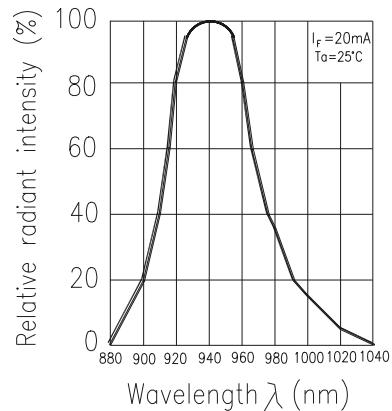


Fig. 4 Forward Current vs. Forward Voltage

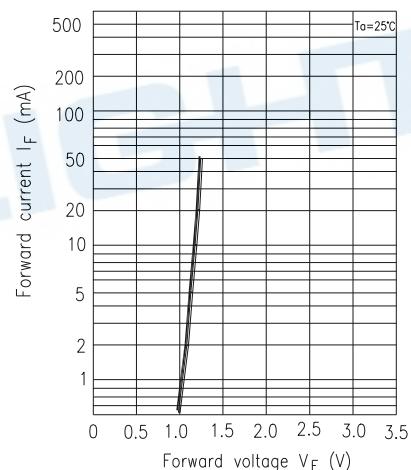
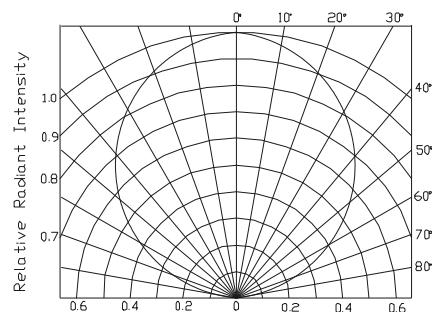


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

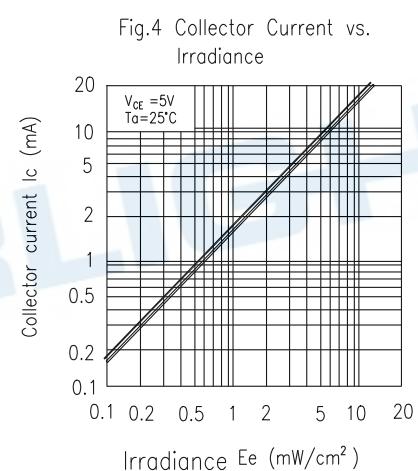
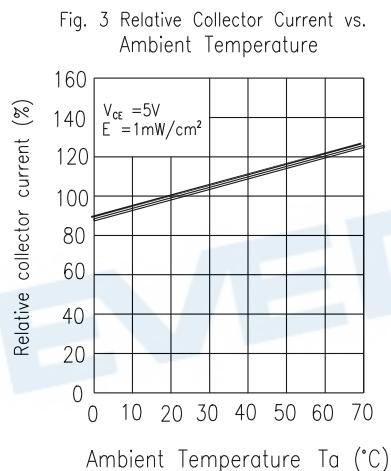
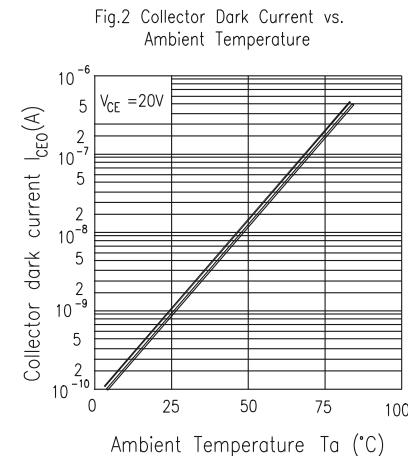
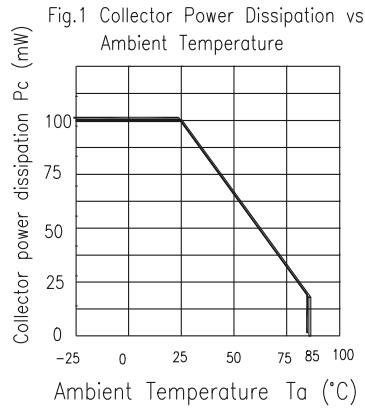


Fig.5 Spectral Sensitivity

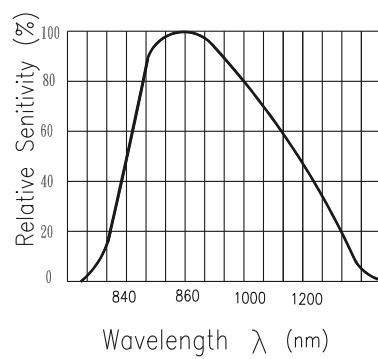
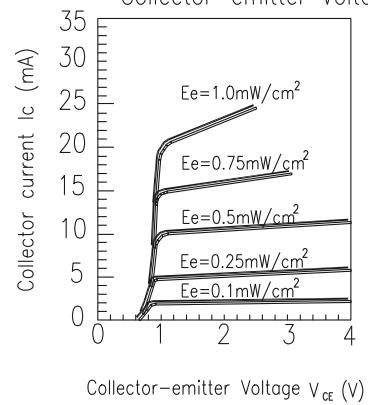


Fig.6 Collector Current vs. Collector-emitter Voltage



Typical Electrical/Optical/Characteristics Curves for ITR

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

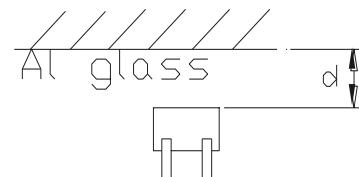
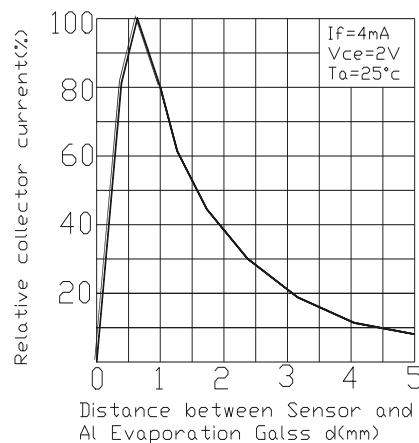


Fig.2 Relative Collector Current vs. Card Moving Distance (1)

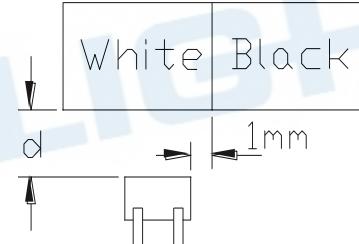
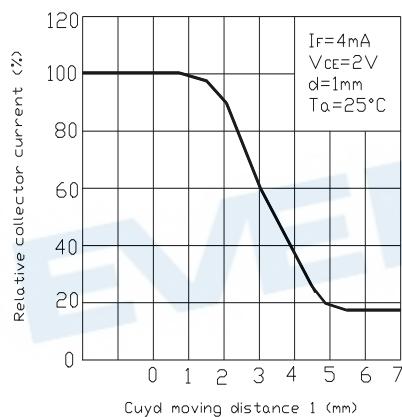
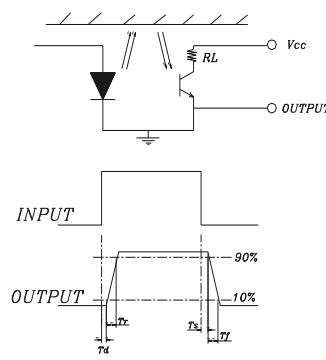
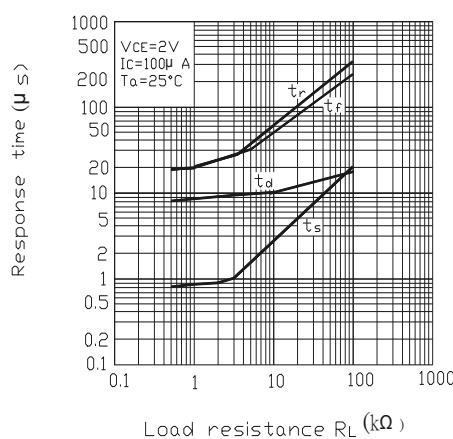


Fig.3 Response Time vs. Load Resistance



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

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
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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