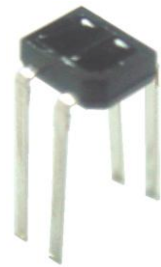


### ITR8307/F43



#### 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.

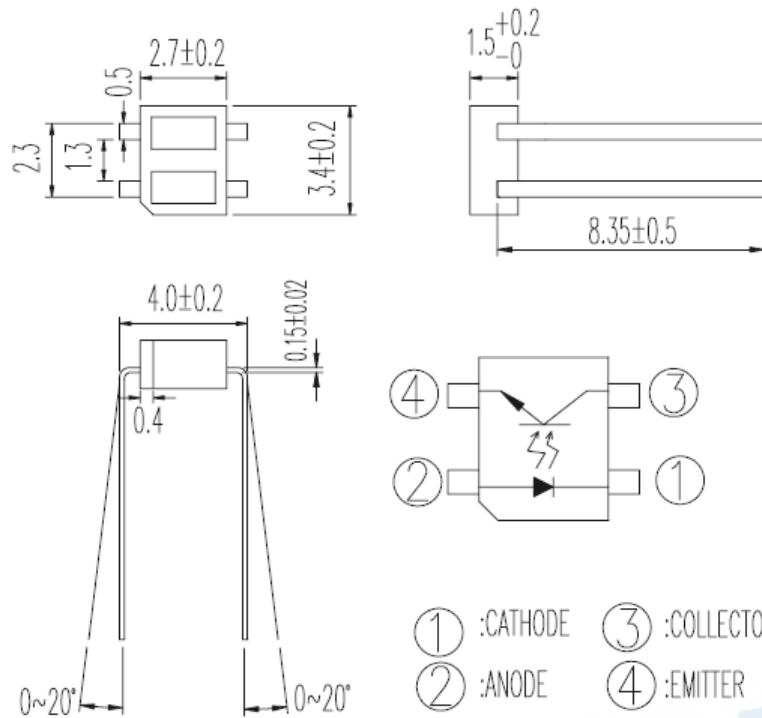
#### Applications

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

#### Device Selection Guide

Device No.	Chip Material
IR	GaAs
PT	Silicon

## Package Dimensions



● Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions  $\pm 0.15\text{mm}$

## Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) $25^\circ\text{C}$ Free Air Temperature	$P_d$	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		$T_{opr}$	-25~+85	$^\circ\text{C}$
Storage Temperature		$T_{stg}$	-30~+100	$^\circ\text{C}$
Lead Soldering Temperature (*2)		$T_{sol}$	260	$^\circ\text{C}$

● Notes:

- (\*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
<b>Input</b>	Forward Voltage	$V_F$	–	1.2	1.6	V	$I_F=20\text{mA}$
	Reverse Current	$I_R$	–	–	10	$\mu\text{A}$	$V_R=6\text{V}$
	Peak Wavelength	$\lambda_P$	–	940	–	nm	$I_F=20\text{mA}$
<b>Output</b>	Dark Current	$I_{CEO}$	–	–	100	nA	$V_{CE}=10\text{V}$ , $E_e=0\text{ mW/cm}^2$
<b>Transfer Characteristics</b>	Collect Current	$I_C(\text{ON})$	0.1	–	–	mA	$V_{CE}=5\text{V}$ $I_F=20\text{mA}$
	Leakage Current	$I_{CEOD}$	–	–	1	nA	$V_{CE}=5\text{V}$ $I_F=20\text{mA}$
	Rise time	$t_r$	–	20	–	$\mu\text{s}$	$V_{CE}=2\text{V}$ , $I_C=0.1\text{mA}$ , $RL=1\text{k}\Omega$ , $d=1\text{mm}$
	Rise time	$t_f$	–	20	–	$\mu\text{s}$	

## Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

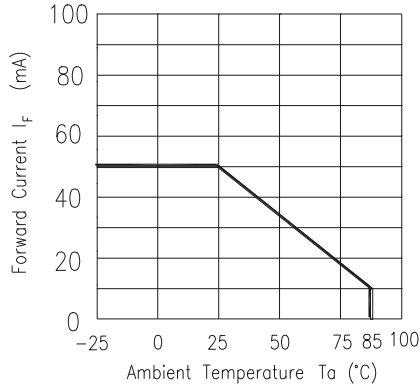


Fig. 2 Spectral Distribution

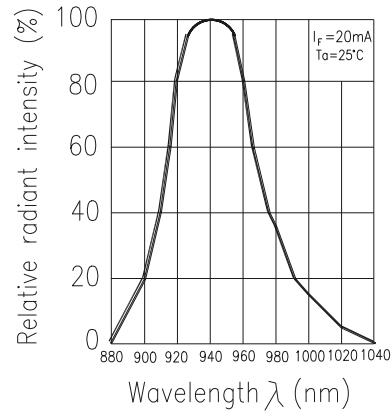


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

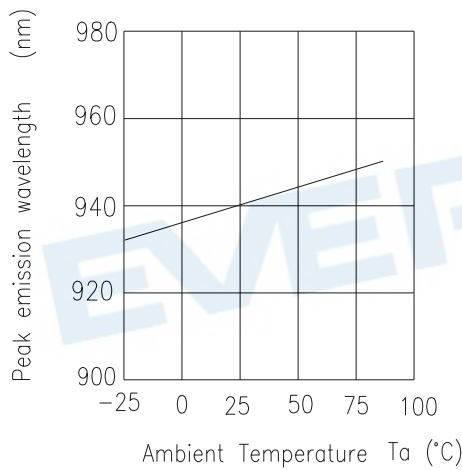


Fig. 4 Forward Current vs. Forward Voltage

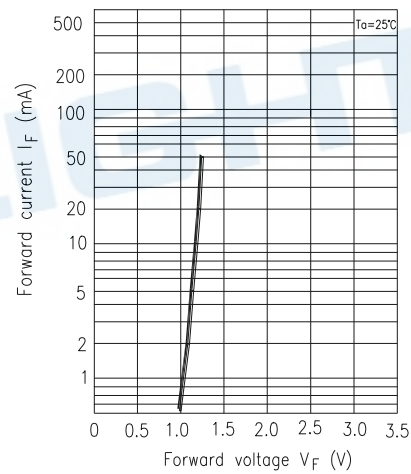


Fig. 5 Forward Voltage vs. Ambient Temperature

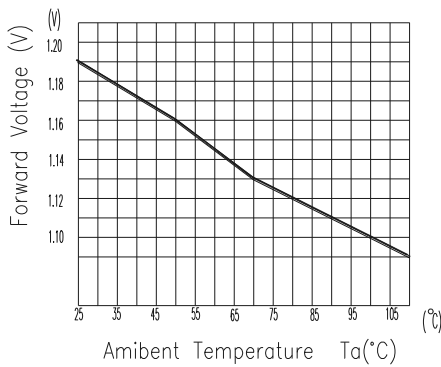
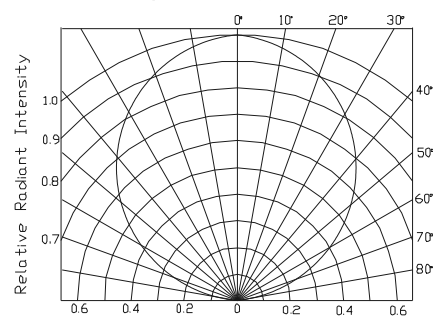


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

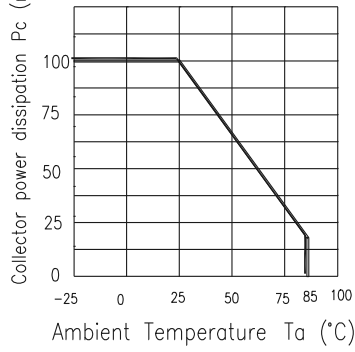


Fig.2 Collector Dark Current vs. Ambient Temperature

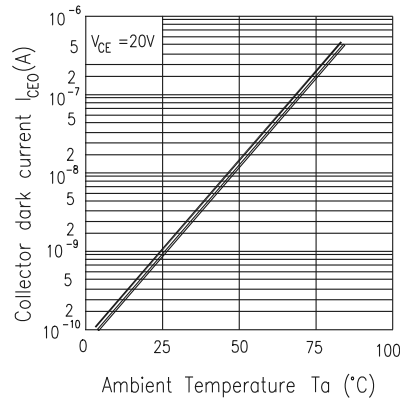


Fig. 3 Relative Collector Current vs. Ambient Temperature

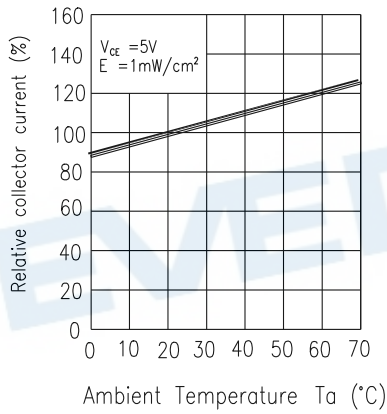


Fig.4 Collector Current vs. Irradiance

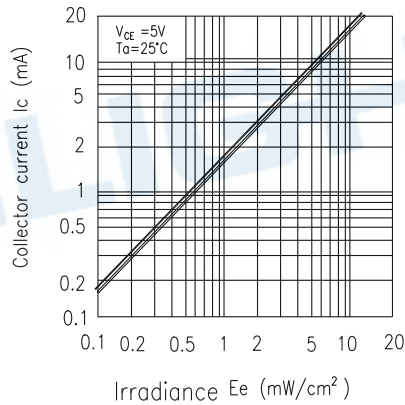


Fig.5 Spectral Sensitivity

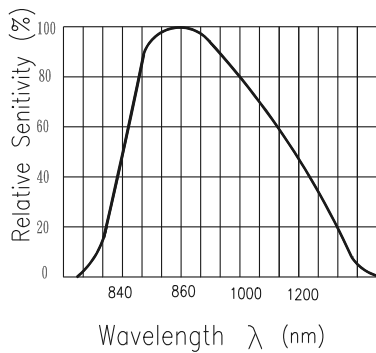
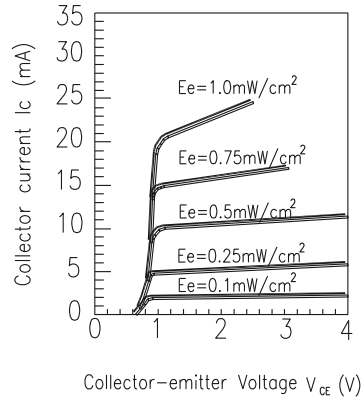


Fig.6 Collector Current vs. Collector-emitter Voltage



## Typical Electrical/Optical/Characteristics Curves for ITR

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

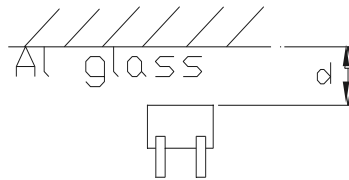
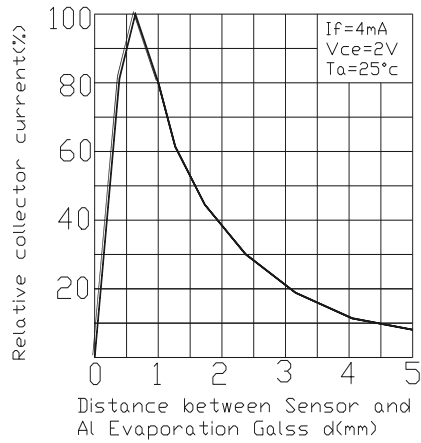


Fig.2 Relative Collector Current vs. Card Moving Distance (l)

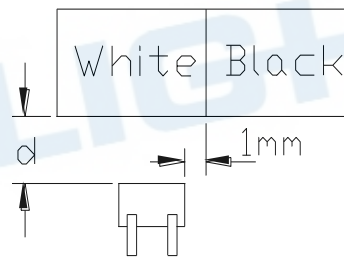
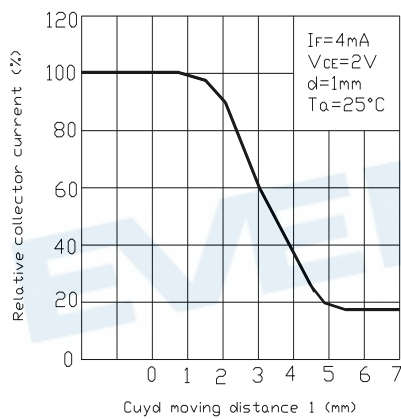
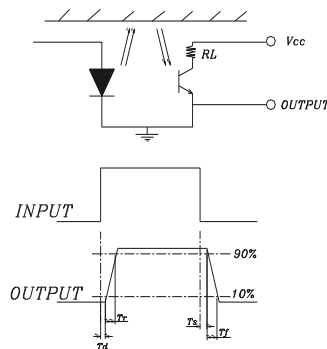
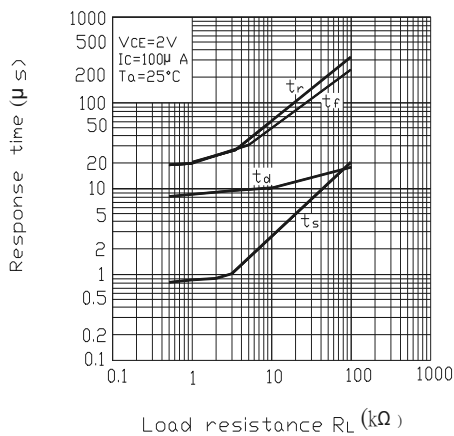


Fig.3 Response Time vs. Load Resistance



## 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

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