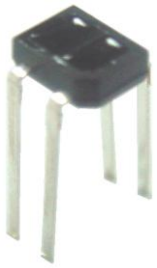
DATASHEET

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.

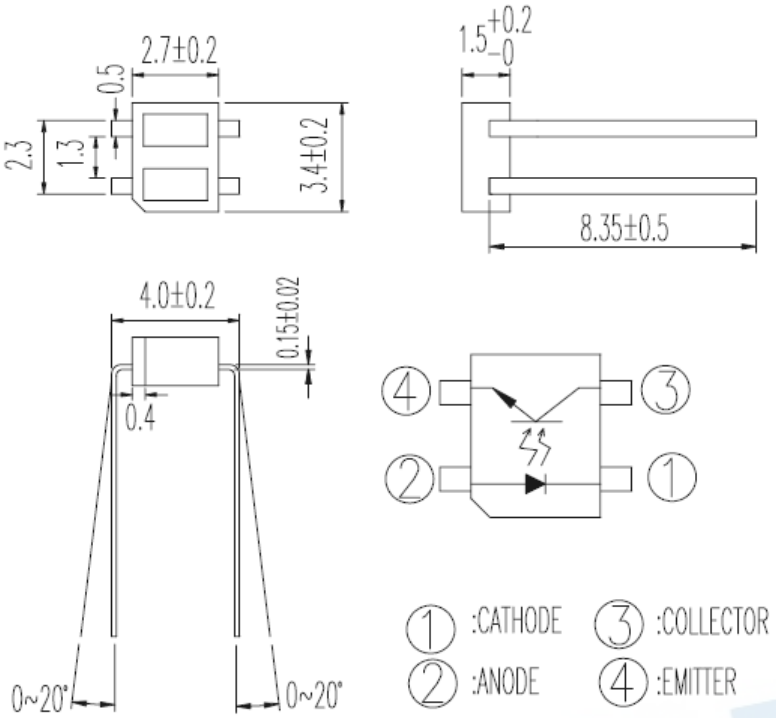
Applications

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

Device Selection Guide

Device No.	Chip Material
IR	GaAs
PT	Silicon

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

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	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

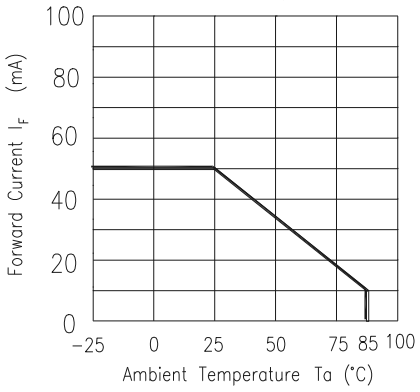


Fig. 2 Spectral Distribution

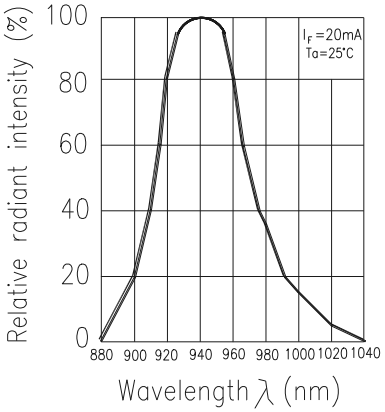


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

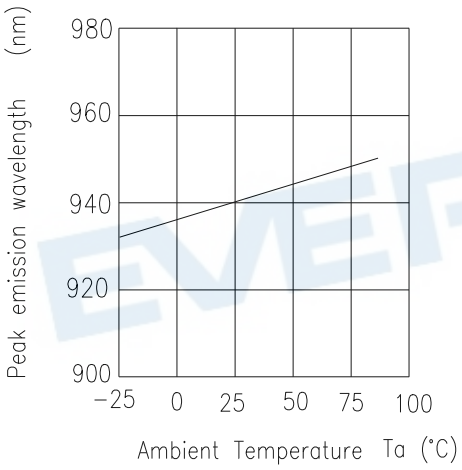


Fig. 4 Forward Current vs. Forward Voltage

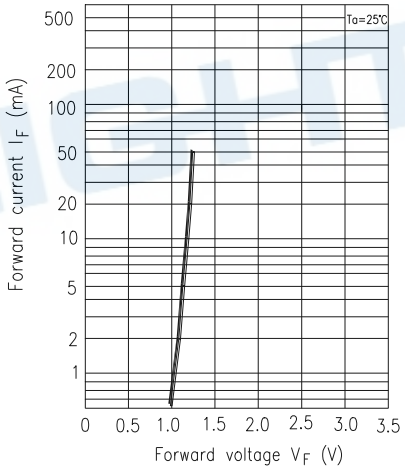


Fig. 5 Forward Voltage vs. Ambient Temperature

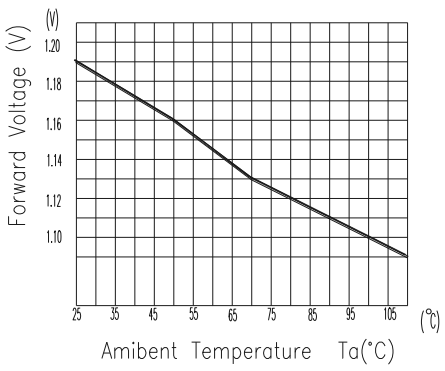
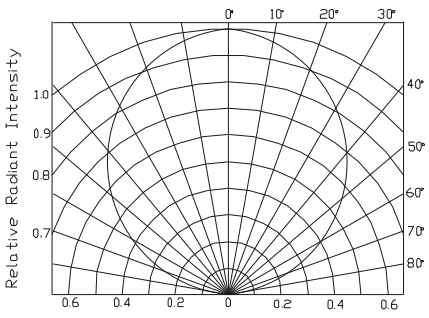


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

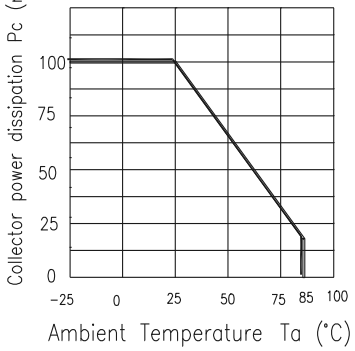


Fig.2 Collector Dark Current vs. Ambient Temperature

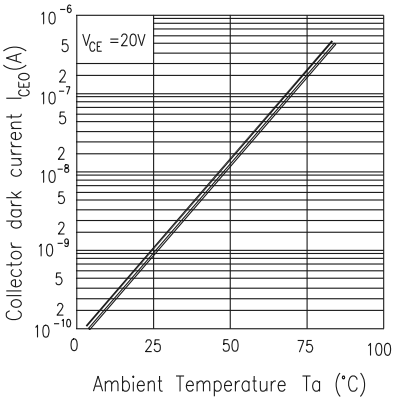


Fig. 3 Relative Collector Current vs. Ambient Temperature

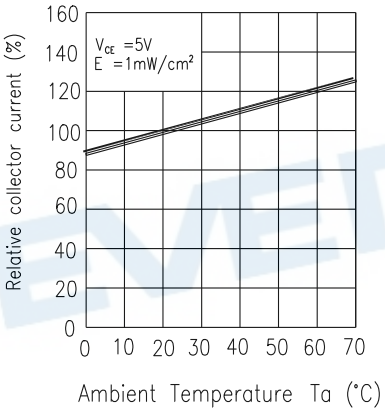


Fig.4 Collector Current vs. Irradiance

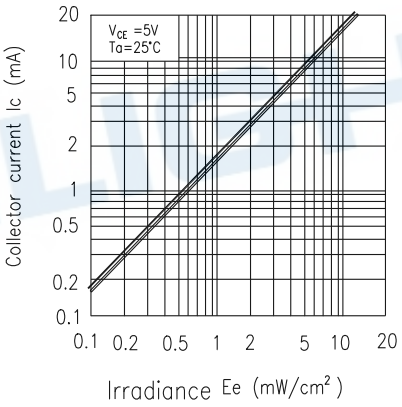


Fig.5 Spectral Sensitivity

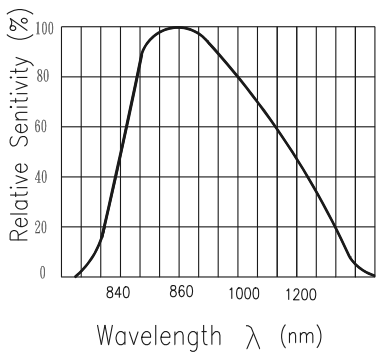
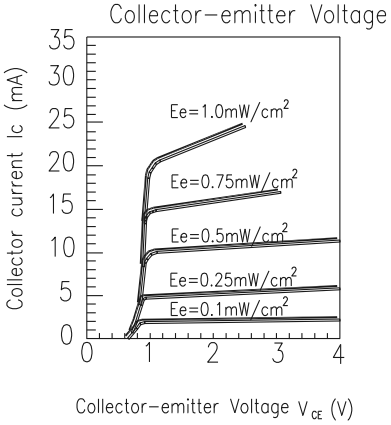
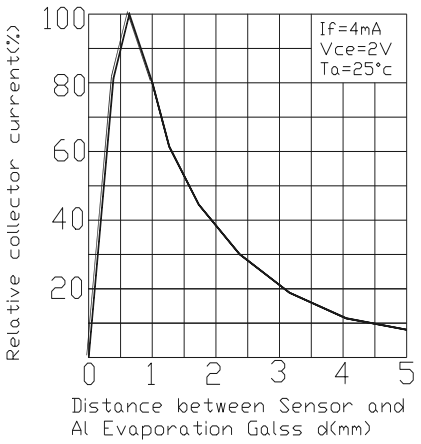


Fig.6 Collector Current vs. Collector-emitter Voltage



Typical Electrical/Optical/Characteristics Curves for ITR

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



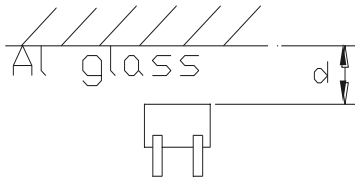
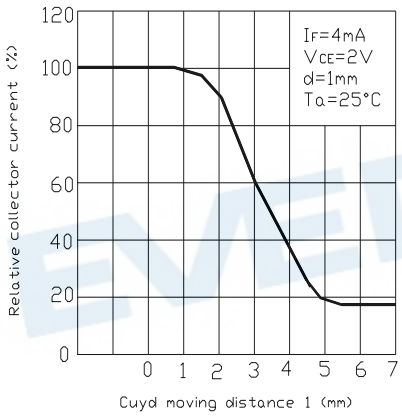


Fig.2 Relative Collector Current vs. Card Moving Distance (1)



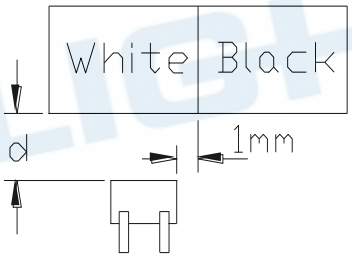
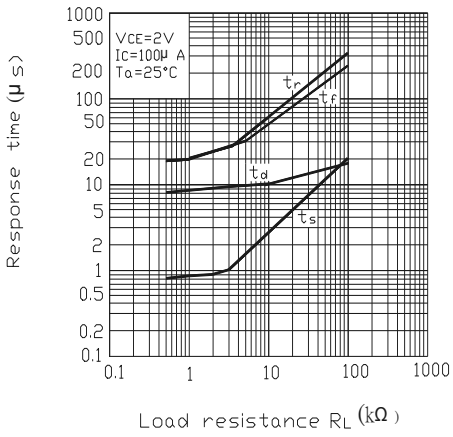
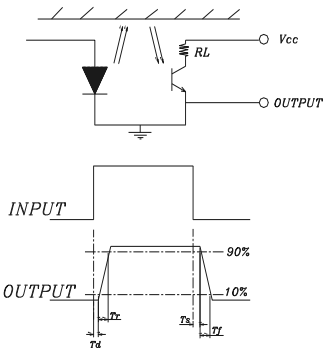


Fig.3 Response Time vs. Load Resistance

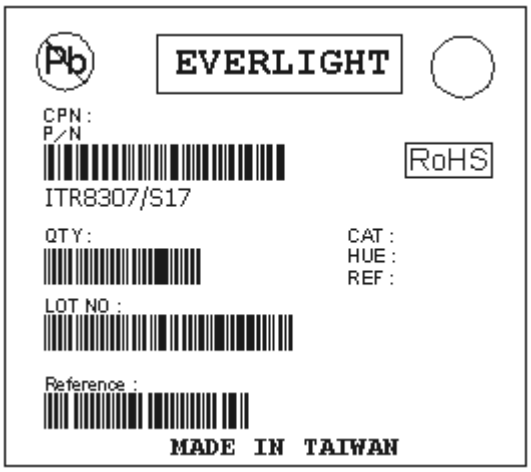




Packing Quantity Specification

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

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