DATASHEET

ITR8307/L24/F43

Features

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

Description

ITR8307/L24/F43 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.

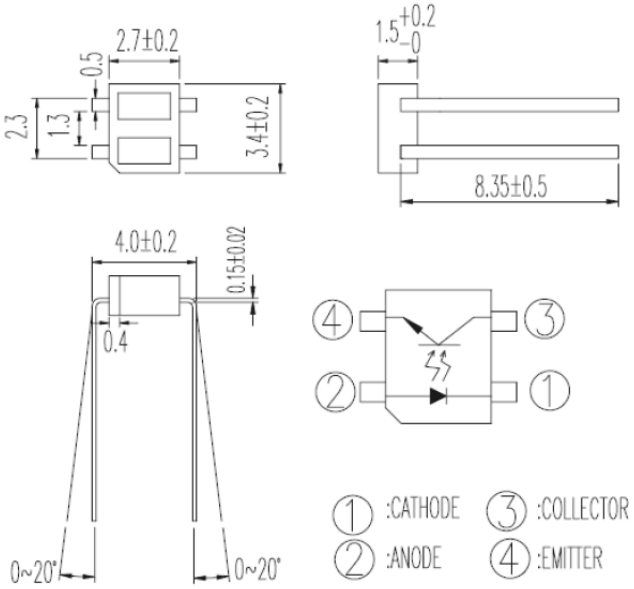
Applications

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

Device Selection Guide

Device No.	Chip Material
IR	GaAs
PT	Silicon

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.25mm

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	75	mW
	Reverse Voltage	V_R	6	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	100	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	35	V
	Emitter-Collector Voltage	B V_{ECO}	6	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-30~+90	℃
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	Condition
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	---
Output	Dark Current	I_{CEO}	---	---	100	nA	V_{CE}=10V Ee=1mW/cm^2
Transfer Characteristics	Light Current	$I_{C(ON)}$	0.5	3.0	15.0	mA	V_{CE}=2V, I_F=4mA
	Leakage Current	I_{LEAK}	-	-	5	μA	V_{CE}=2V, I_F=4mA
	Rise time	t_r	-	80	400	μs	V_{CE}=2V I_C=10mA R_L=100Ω, d=1mm
	Fall time	t_f	-	70	400	μs	

Rank

Conditions：I_F=4mA V_{CE}=2V

Unit: mA

Bin number	Min	Max
B	0.50	1.10
C	0.90	1.90
D	1.45	3.20
E	2.45	5.40
F	4.05	8.90
G	6.30	15.0

Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

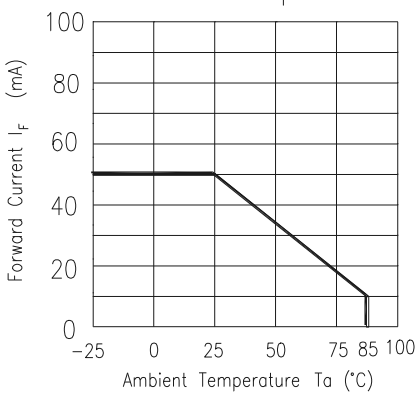


Fig. 2 Spectral Distribution

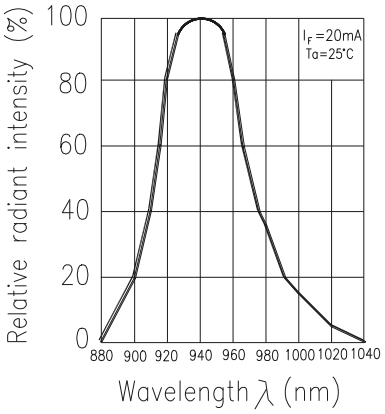


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

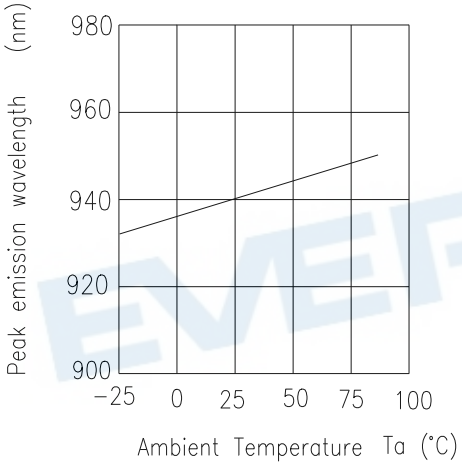


Fig. 4 Forward Current vs. Forward Voltage

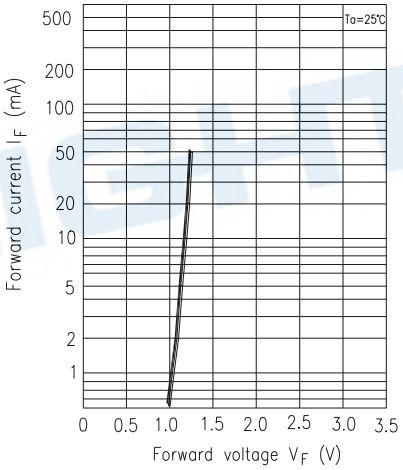


Fig. 5 Forward Voltage vs. Ambient Temperature

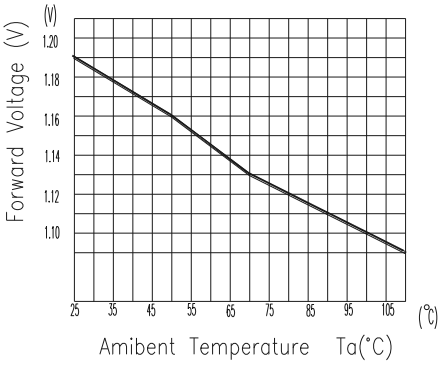
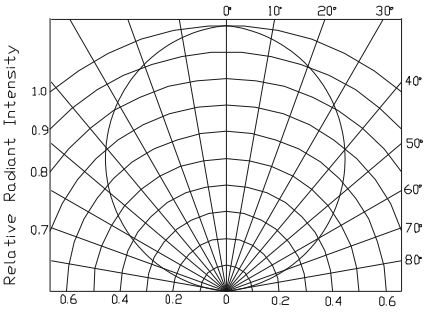


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

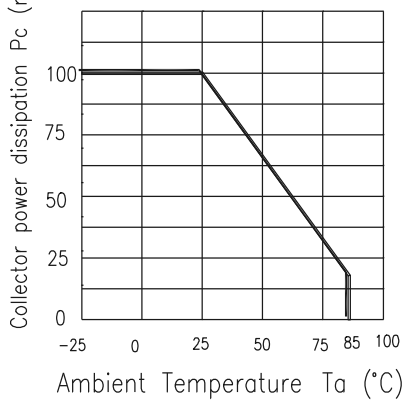


Fig.2 Collector Dark Current vs. Ambient Temperature

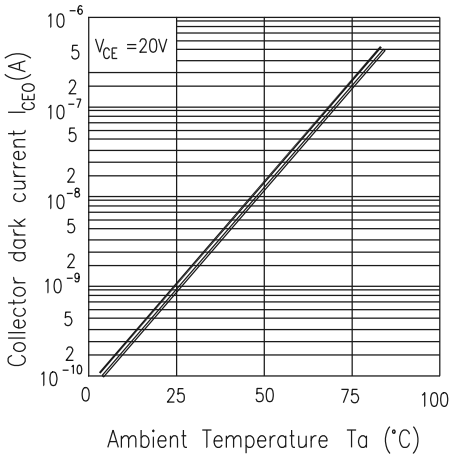


Fig. 3 Relative Collector Current vs. Ambient Temperature

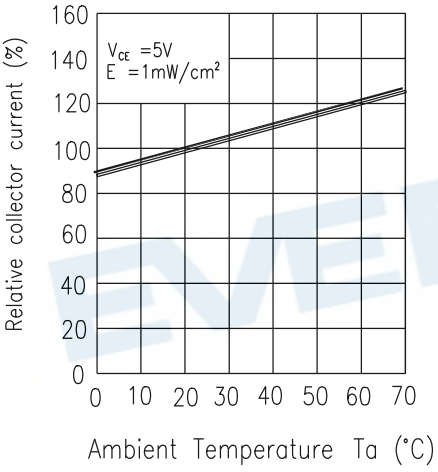


Fig.4 Collector Current vs. Irradiance

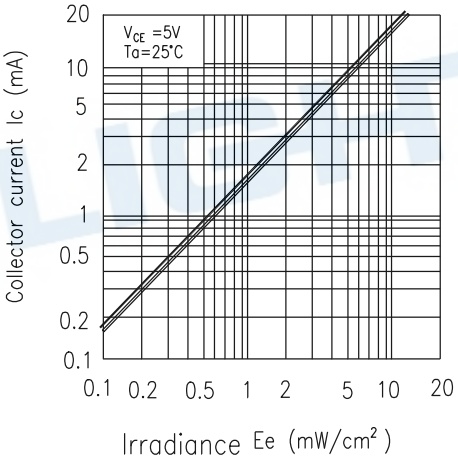


Fig.5 Spectral Sensitivity

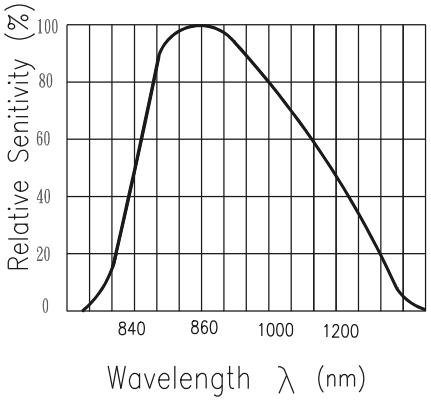
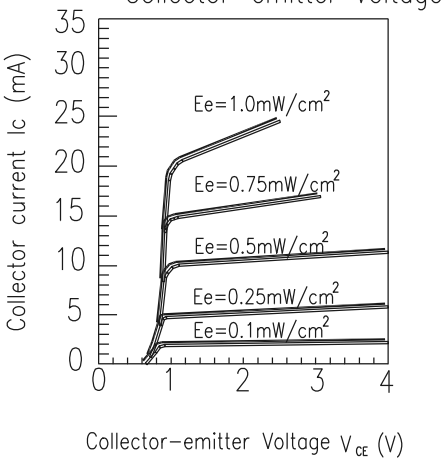
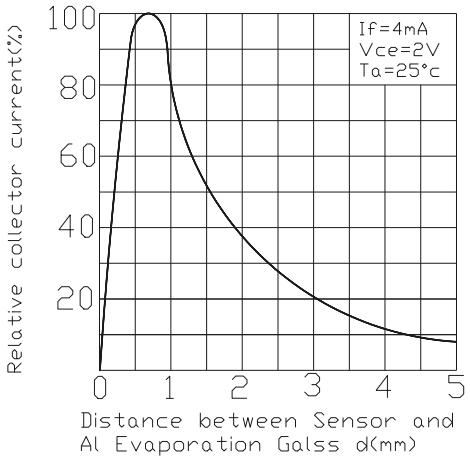


Fig.6 Collector Current vs. Collector-emitter Voltage



Typical Electrical/Optical/Characteristics Curves for ITR

Fig.7 Relative Collector Current vs. Distance between Sensor and Al Evaporation Galss



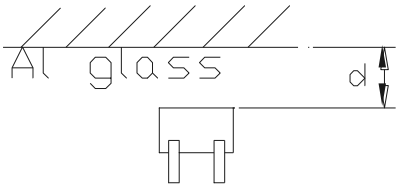
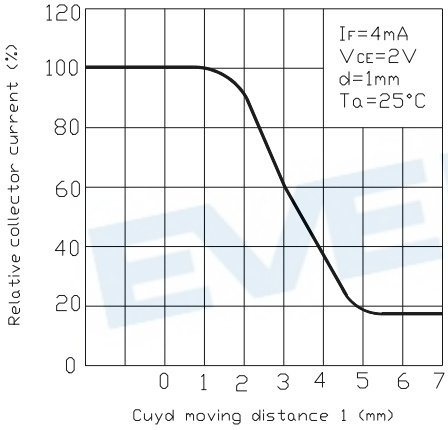


Fig.8 Relative Collector Current vs. Card Moving Distance (1)



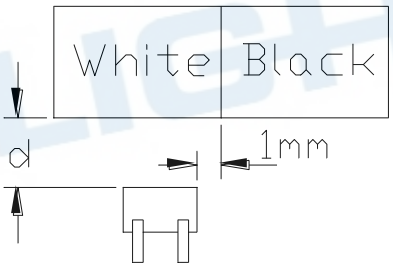
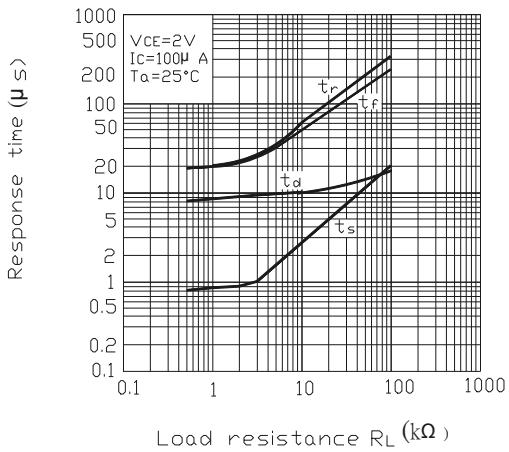
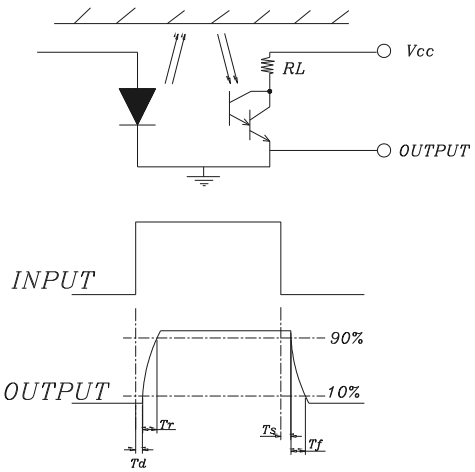


Fig.9 Response Time vs. Load Resistance

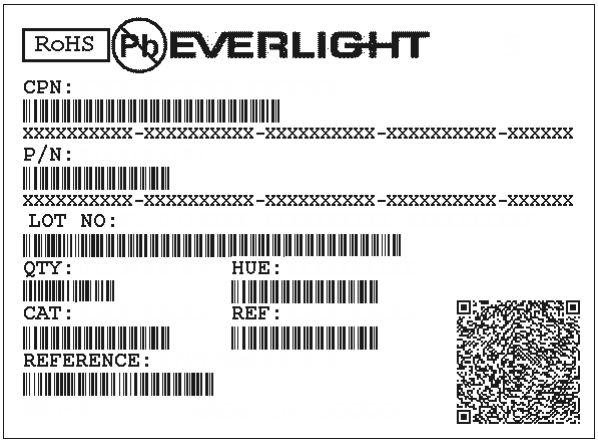




Packing Quantity Specification

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

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 ℃ 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 ℃/60%RH, or
  b) Stored at <20% RH
- Devices require bake, before mounting, if:
  Humidity Indicator Card is > 20% when read at 23 ± 5 ℃
- If baking is required, devices may be baked:
  a) 192 hours at 40℃,and <5% RH(dry air/nitrogen) or
  b) 96 hours at 60℃,and <5% RH for all device containers
  c) 24 hours at 125 ℃

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.
4. 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 the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
5. These specification sheets include materials protected under copyright of EVERLIGHT. Reproduction in any form is prohibited without obtaining EVERLIGHT's prior consent.
6. This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized Everlight sales agent for special application request.