

EAITRCA6

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

EAITRCA6 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.

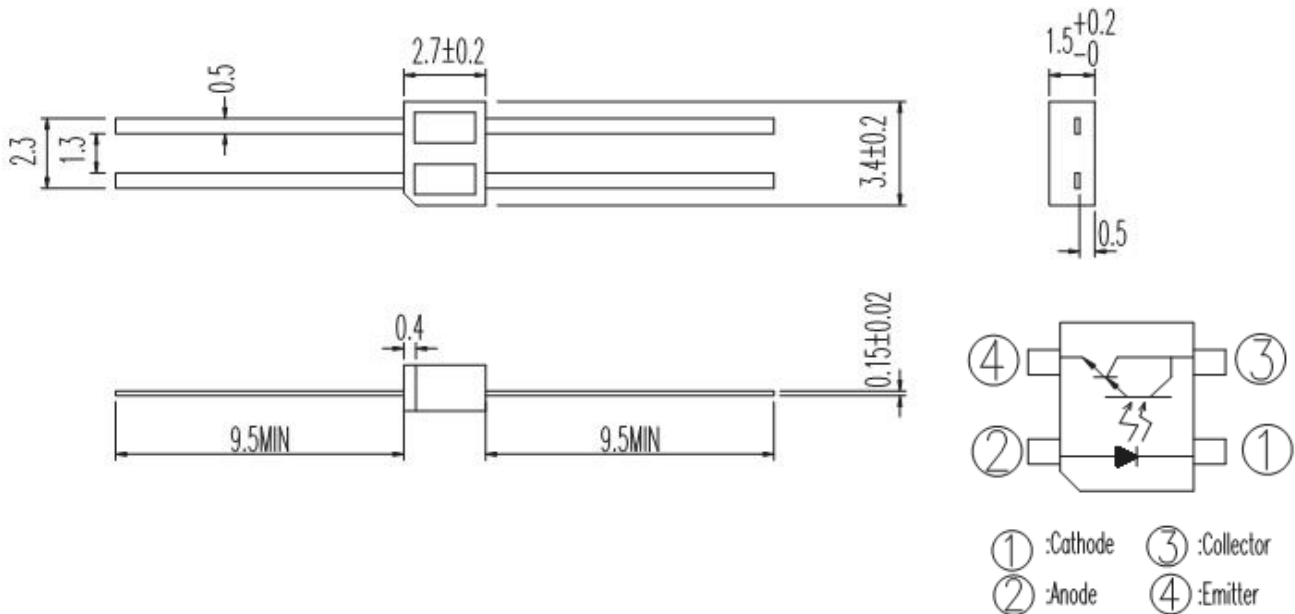
Applications

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

Device Selection Guide

Device No.	Chip Material
IR	GaAlAs
PT	Silicon

Package Dimensions



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	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	°C
Storage Temperature		Tstg	-30~+90	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	260

Notes: (*1) $t_w=100 \mu\text{sec.}$, $T=10 \text{ msec.}$ (*2) $t \leq 10 \text{ Sec}$

Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	---	1.2	1.4	V	$I_F=20mA$
	Reverse Current	I_R	---	---	10	μA	$V_R=6V$
	Peak Wavelength	λ_P	---	940	---	nm	---
Output	Dark Current	I_{CEO}	---	---	1	μA	$V_{CE}=10V$
Transfer Characteristics	Light Current	$I_{C(ON)}$	0.5	3.0	15.0	mA	$V_{CE}=2V, I_F=4mA$
	Leakage Current	I_{CEOD}	---	---	5	μA	
	Rise time	t_r	---	80	400	μsec	$V_{CE}=2V$ $I_C=10mA$ $RL=100\Omega, d=1mm$
	Fall time	t_f	---	70	400	μsec	

Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

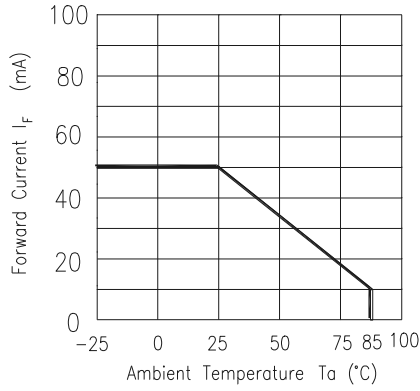


Fig. 2 Spectral Distribution

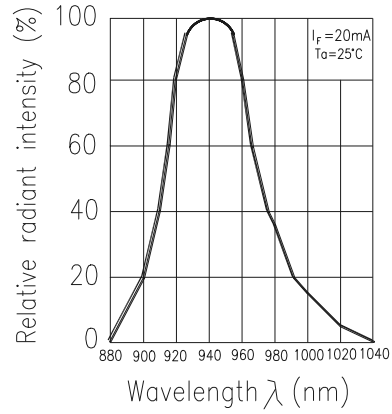


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

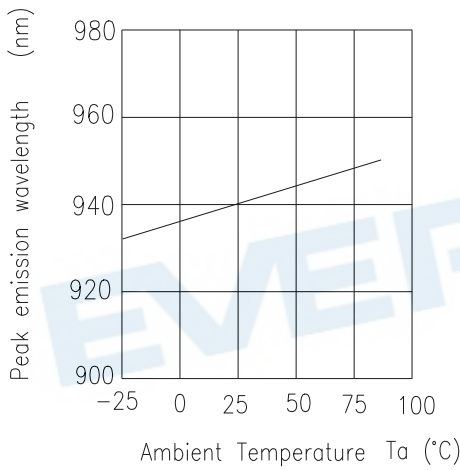


Fig. 4 Forward Current vs. Forward Voltage

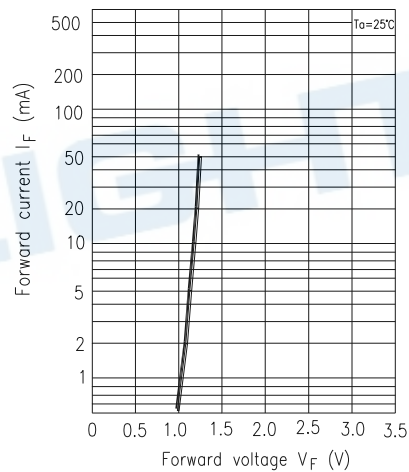


Fig. 5 Forward Voltage vs. Ambient Temperature

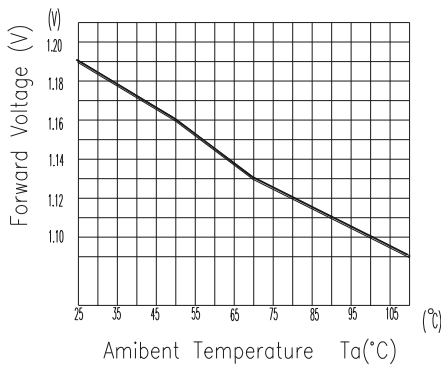
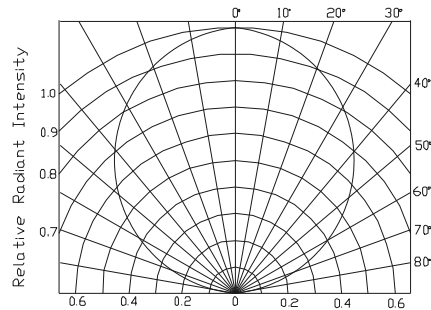


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



Typical Electro/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

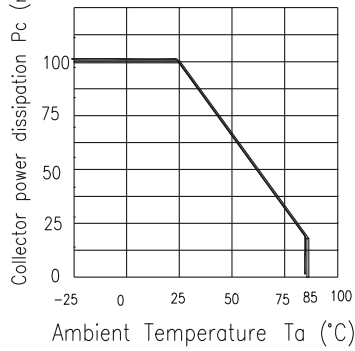


Fig.2 Collector Dark Current vs. Ambient Temperature

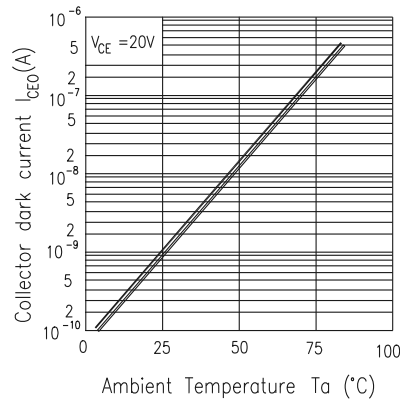


Fig. 3 Relative Collector Current vs. Ambient Temperature

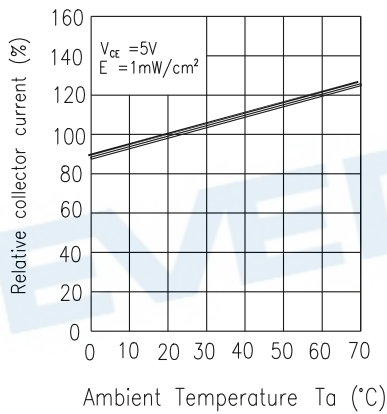


Fig.4 Collector Current vs. Irradiance

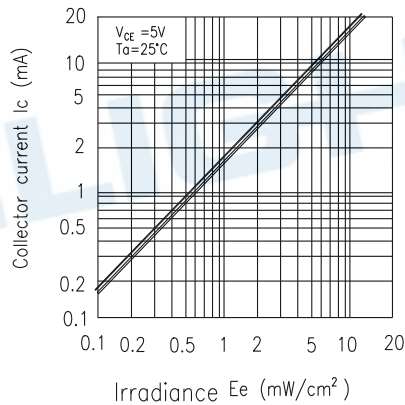


Fig.5 Spectral Sensitivity

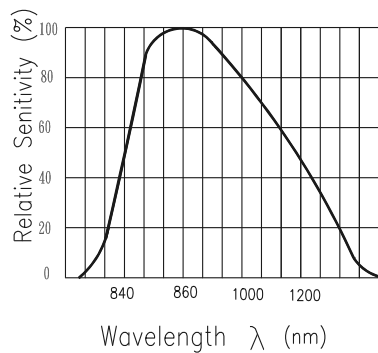
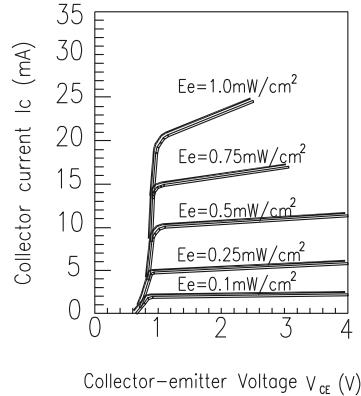


Fig.6 Collector Current vs. Collector-emitter Voltage



Typical Electrical/Optical/Characteristics Curves for ITR

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

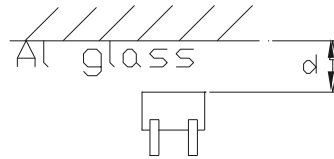
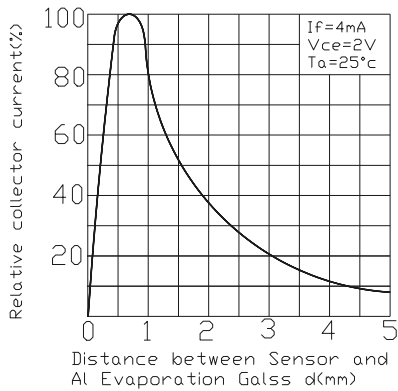


Fig.8 Relative Collector Current vs. Card Moving Distance (1)

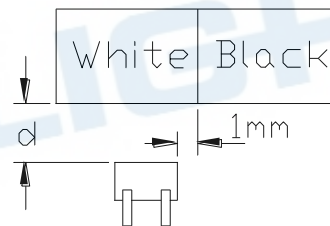
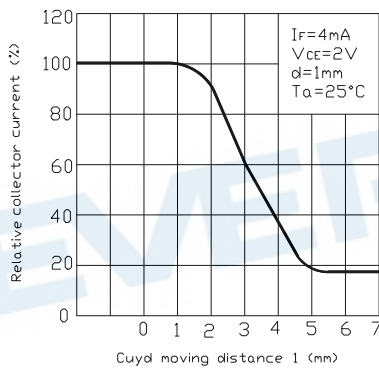
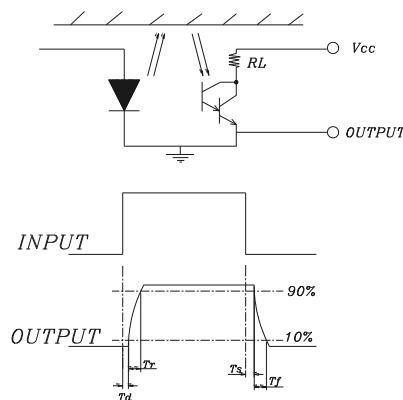
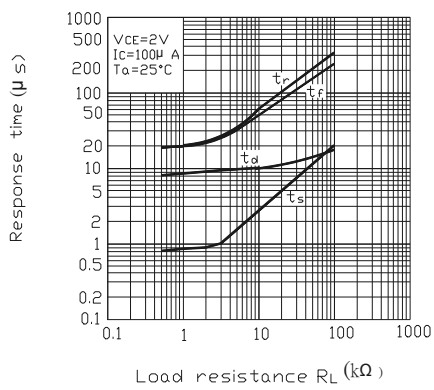


Fig.9 Response Time vs. Load Resistance



Packing Quantity Specification

1. 160 Pcs/ Per Tube
2. 18 Tubes / 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.
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.
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