

SUBMINIATURE PHOTOINTERRUPTER

MIT-4A11B

Description

The MIT-4A11B consists of a Gallium Arsenide infrared emitting diode and a NPN silicon phototransistor, double-layer mold plastic package. It is a transmissive subminiature photointerrupter.

Features

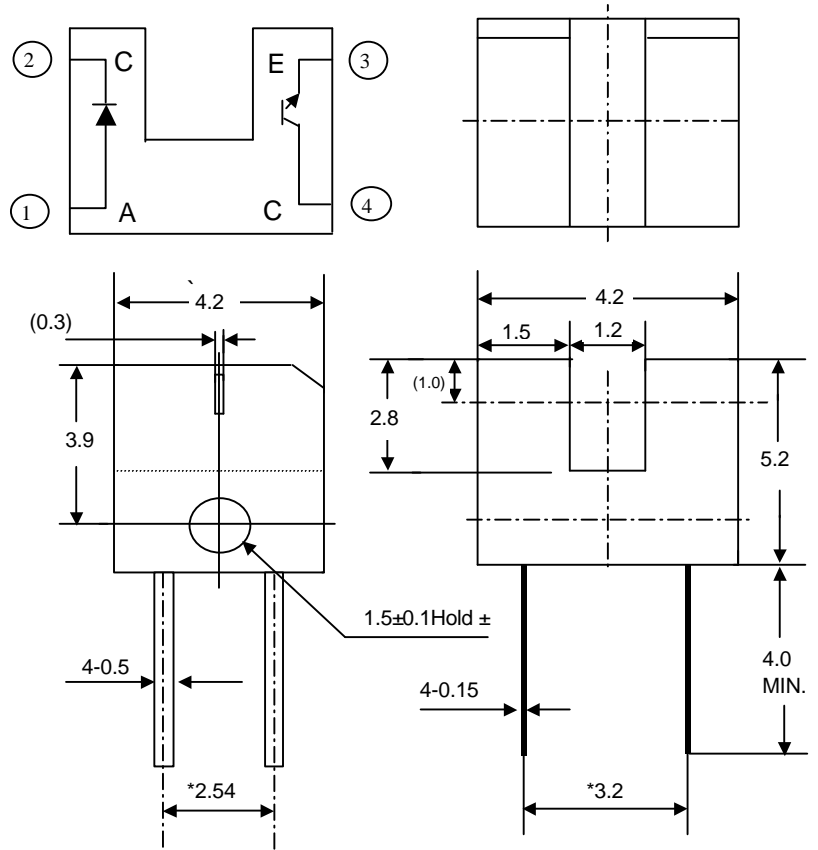
- Ultra-compact
- PWB mounting type package
- High sensing accuracy (Slit width: 0.3mm)
- Gap between light emitter and detector: 1.2mm

Applications

- Cameras
- Floppy disk drives
- Printer

Package Dimensions

Unit : mm



NOTE

1. Tolerance is ± 0.25 mm (.010") unless otherwise noted.
2. Burr's dimension : 0.15MAX
- 3.() : Reference dimensions
4. The dimensions indicated by * refer to those measured from the lead base

Absolute Maximum Ratings

@ $T_A = 25$

Parameter		Symbol	Maximum Rating	Unit
INPUT	Continuous Forward Current	I_F	50	mA
	Reverse Voltage	V_R	5	V
	Power Dissipation	P_{ad}	75	mW
OUTPUT	Collector-emitter breakdown voltage	$V_{(BR)CEO}$	30	V
	Emitter-Collector breakdown voltage	$V_{(BR)ECO}$	5	V
	Collector power dissipation	P_C	75	mW
Total power dissipation		P_{TOT}	100	mW
Operating Temperature Range		T_{opr}	-25 to + 85	
Storage Temperature Range		T_{stg}	-40 to + 100	
Soldering temperature		T_{sol}	260°C for 3 seconds	

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Unity Opto Technology Co., Ltd.

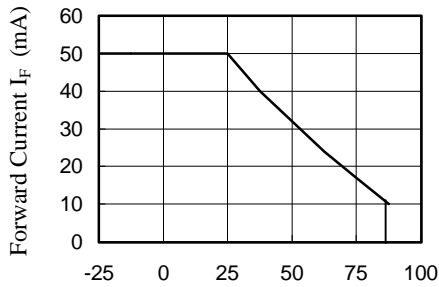
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Optical-Electrical Characteristics

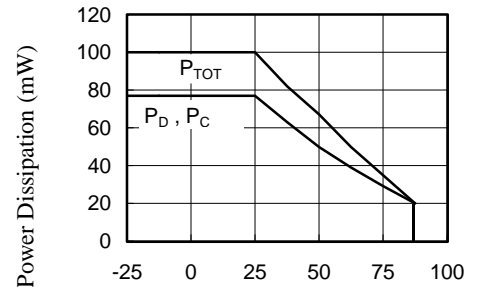
@T_A =25

Parameter		symbol	Min.	Typ.	Max.	Unit.	Test Conditions
Input	Forward Voltage	V _F		1.2	1.4	V	I _F =20mA
	Reverse Current	I _R			10	μA	V _R =3V
Output	Collector Dark Current	I _{ceo}			100	nA	V _{ce} =10V
	Collector Emitter Saturation Voltage	V _{CE(SAT)}			0.4	V	I _c =0.1mA, E _e =0.1mW/cm ²
Transfer Characteristics	Collector Current	I _c (on)	0.6		5.0	mA	I _F =20mA, V _{ce} =5V
	Response Time (RISE)	t _r		50	150	μS	I _c =100μA, V _{ce} =5V
	Response Time (FALL)	t _f		50	150	μS	R _L =1KΩ

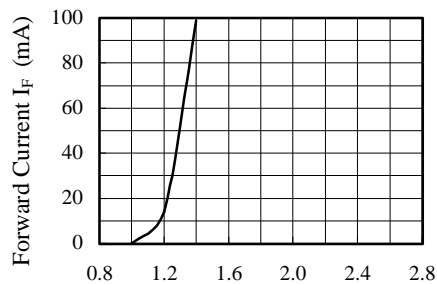
Typical Optical-Electrical Characteristic Curves



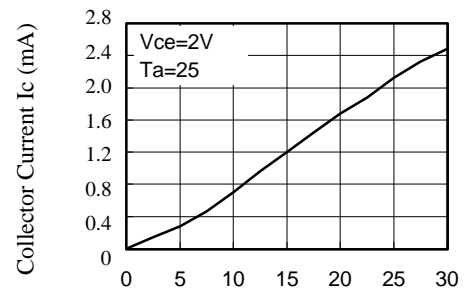
Ambient Temperature T_A
Fig.1 forward Current vs. Ambient Temperature



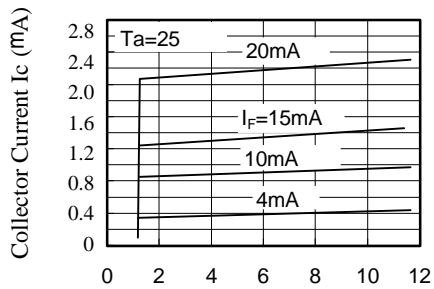
Ambient Temperature T_A (°C)
Fig.2 Power Dissipation vs Ambient Temperature



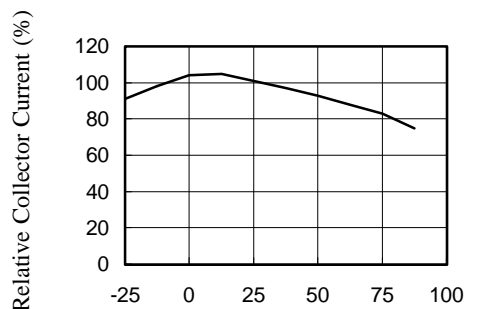
Forward Voltage V_F (V)
Fig.3 Forward Current vs Forward Voltage



Forward Current I_F (mA)
Fig.4 Collector Current vs Forward Current

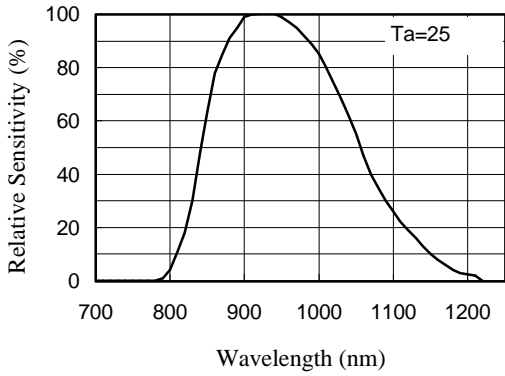
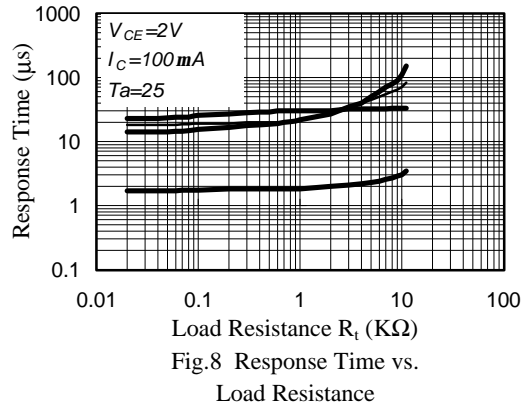
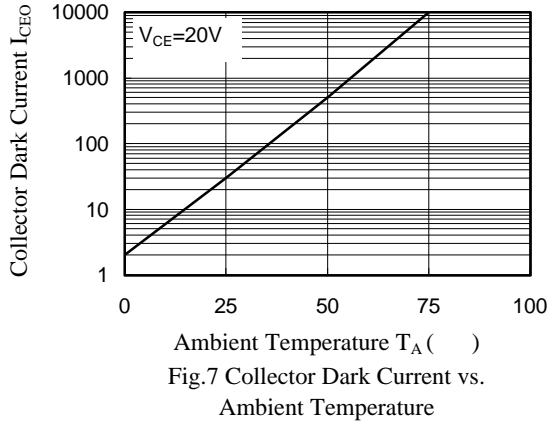


Collector-Emitter Voltage V_{ce} (V)
Fig.5 Collector Current vs. V_{ce}

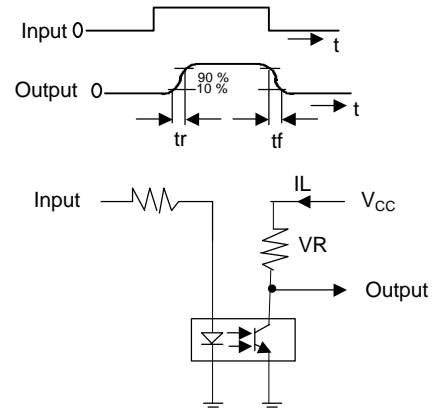


Ambient Temperature T_A (°C)
Fig.6 Relative Collector Current vs. T_A

Typical Optical-Electrical Characteristic Curves



Response Time Measurement Circuit



Sensing Position Characteristics (Typical)

