

Part Number: **PI-A4**

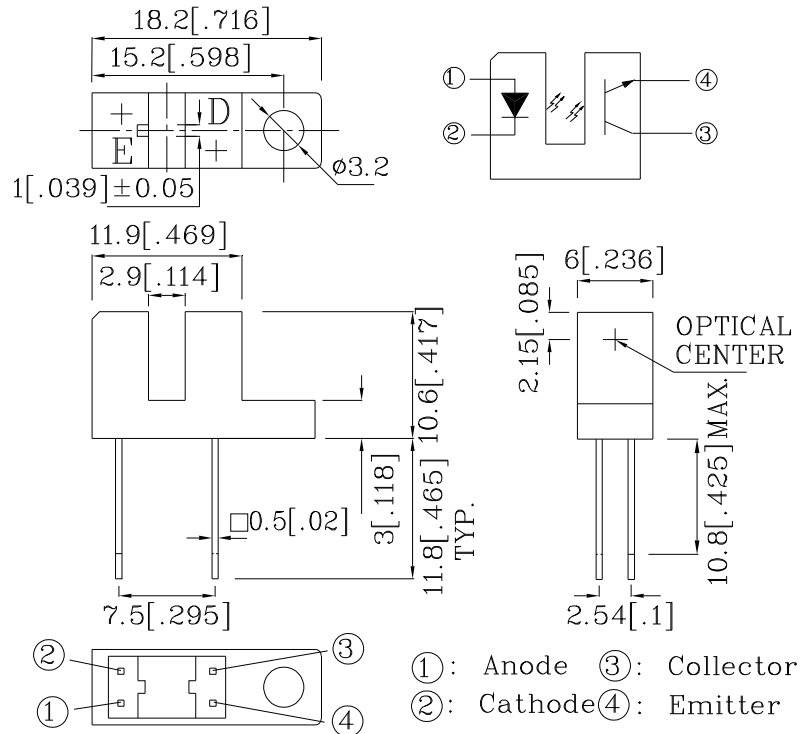
PHOTO-INTERRUPTER

Features

- Ultra-small.
- Minimal influence from stray light.
- Low collector-emitter saturation voltage.
- RoHS COMPLIANT.

Applications

- Optical control equipment.
- Cameras.
- Floppy disk drives.



UNIT : MM[INCH]

TOLERANCE : ± 0.25[± 0.01] UNLESS OTHERWISE NOTED.

Absolute Maximum Ratings (T_A=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I _F	50	mA
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _d	75	mW
	Peak Forward Current (Pulse Width <100uS,Duty Cycle=1%)	I _{FP}	1	A
Output	Collector-Emitter Voltage	V _{CEO}	35	V
	Emitter-Collector Voltage	V _{ECO}	6	V
	Collector Current	I _C	20	mA
	Collector Power Dissipation	P _C	75	mW
Operating Temperature		T _{opr}	-25~+85	°C
Storage Temperature		T _{stg}	-40~+100	°C
Soldering Temperature (1/16 inch from body for 5 seconds)		T _{sol}	260	°C

Electrical / Optical Characteristics at TA=25°C

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit	
Input	Forward Voltage	V _F	I _F =20mA	-	1.2	1.5	V	
	Reverse Current	I _R	V _R =5V	-	-	10	μ A	
Output	Collector Dark Current	I _{CEO}	V _{CE} =20V	-	-	100	nA	
Transfer Characteristics	Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =1mA I _F =40mA	-	-	0.4	V	
	Current Transfer Ratio	CTR	V _{CE} =5V I _F =20mA	-	38	-	%	
	Response Time	Rise Time	t _r	V _{CE} =2V I _C =2mA	-	5	25	μ Sec
		Fall Time	t _f	R _L =100 Ω	-	4	20	μ Sec

Fig.1 FORWARD CURRENT Vs. FORWARD VOLTAGE

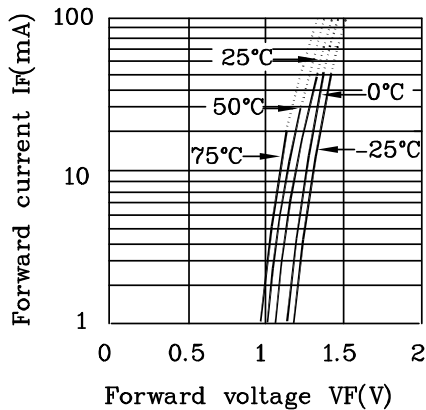


Fig.2 COLLECTOR CURRENT Vs. FORWARD CURRENT

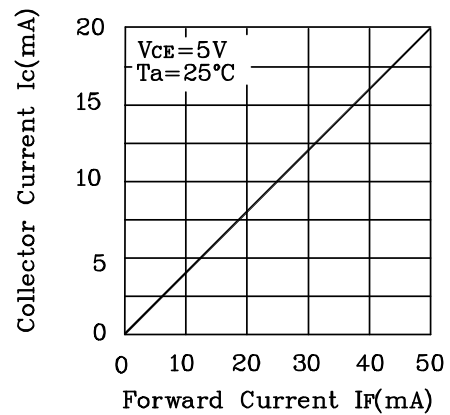


Fig.3 COLLECTOR CURRENT Vs. COLLECTOR-EMITTER VOLTAGE

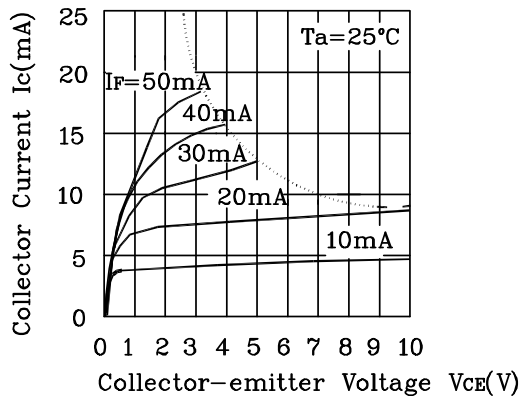


Fig.4 COLLECTOR CURRENT Vs. AMBIENT TEMPERATURE

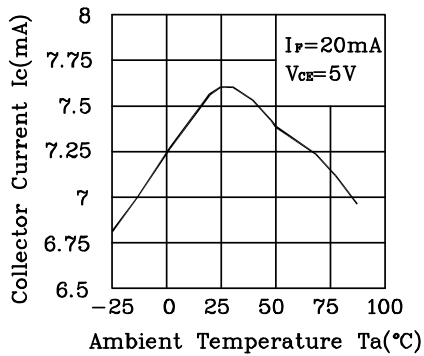


Fig.5 COLLECTOR-EMITTER SATURATION VOLTAGE Vs. AMBIENT TEMPERATURE

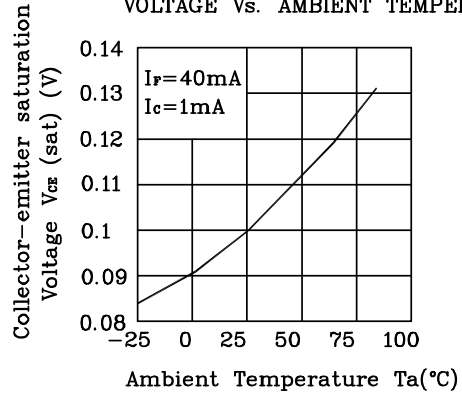


Fig.6 RELATIVE COLLECTOR CURRENT Vs. SHIELD DISTANCE (1)

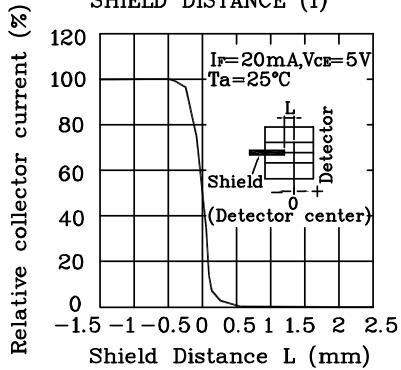


Fig.7 RELATIVE COLLECTOR CURRENT Vs. SHIELD DISTANCE (2)

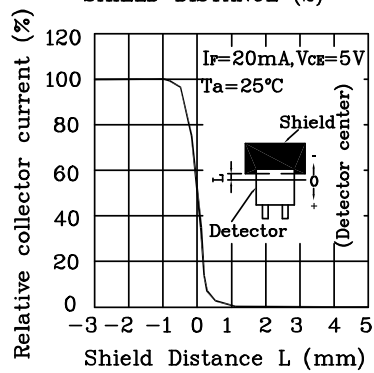
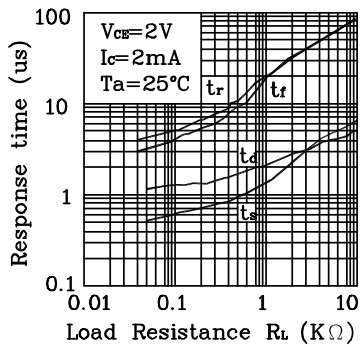
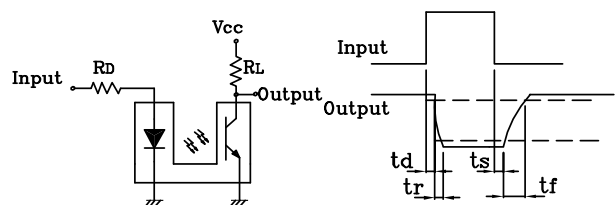


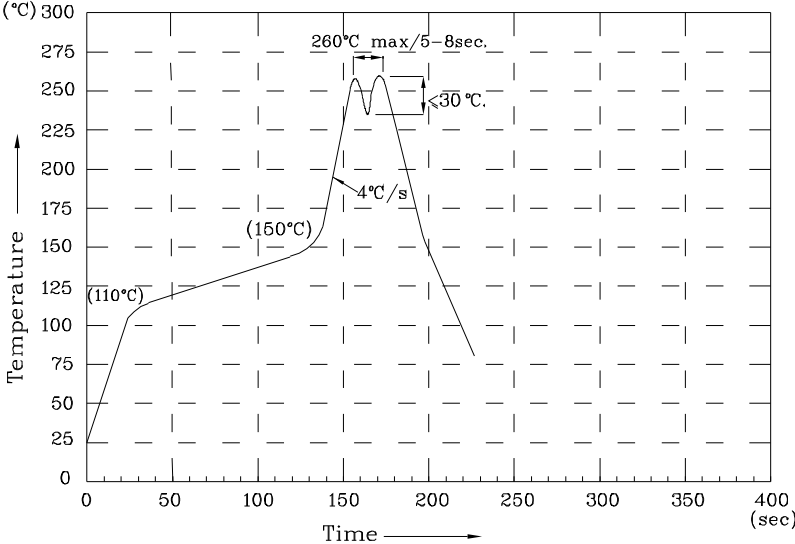
Fig.8 RESPONSE TIME Vs. LOAD RESISTANCE



Test Circuit for Response Time



Wave Soldering Profile For Lead-free Through-hole LED.



NOTES:

- 1.Recommend the wave temperature 245°C~260°C.The maximum soldering temperature should be less than 260°C.
- 2.Do not apply stress on epoxy resins when temperature is over 85 degree°C.
- 3.The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
- 4.No more than once.