

Photointerrupter, Ultraminiature type



Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Forward current	I _F	50	mA
Reverse voltage	V _R	5	V
Power dissipation	P _D	80	mW
Collector-emitter voltage	V _{CEO}	30	V
Emitter-collector voltage	V _{EEO}	4.5	V
Collector current	I _C	30	mA
Collector power dissipation	P _C	80	mW
Operating temperature	T _{opr}	-25 to +85	°C
Storage temperature	T _{stg}	-40 to +100	°C

Applications

- Optical control equipment
- Cameras
- Floppy disk drives

Features

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

Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V _F	-	1.3	1.6	V	I _F =50mA
Reverse current	I _R	-	-	10	μA	V _R =5V
Dark current	I _{CEO}	-	-	0.5	μA	V _{CE} =10V
Peak sensitivity wavelength	λ _P	-	800	-	nm	-
Collector current	I _C	0.18	-	1.08	mA	V _{CE} =0.7V, I _F =3mA
Collector-emitter saturation voltage	V _{CE(sat)}	-	-	0.3	V	I _F =20mA, I _C =0.3mA
Response time	t _r -t _f	-	10	-	μs	V _{CC} =5V, I _F =20mA, R _L =100Ω
Cut-off frequency	f _c	-	1	-	MHz	I _F =50mA * Non-coherent Infrared light emitting diode used.
Peak light emitting wavelength	λ _P	-	950	-	nm	-
Response time	t _r -t _f	-	10	-	μs	V _{CC} =5V, I _C =1mA, R _L =100Ω * This product is not designed to be protected against electromagnetic wave.
Maximum sensitivity wavelength	λ _P	-	800	-	nm	-

Electrical and optical characteristics curves

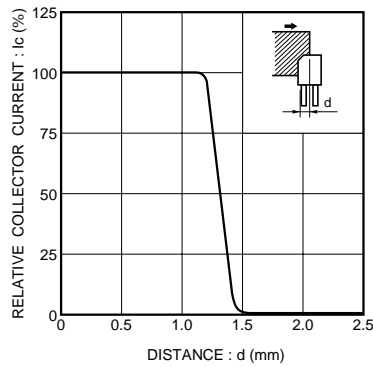


Fig.1 Relative output current vs. distance (I)

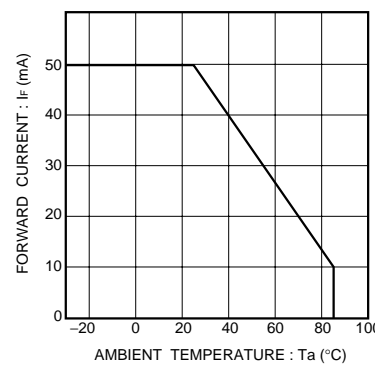


Fig.2 Forward current falloff

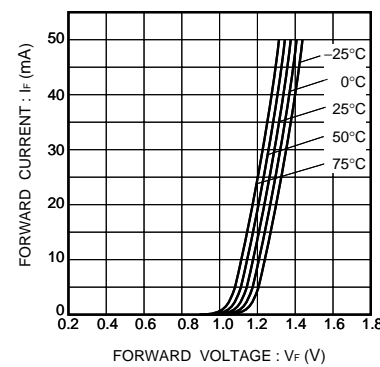


Fig.3 Forward current vs. forward voltage

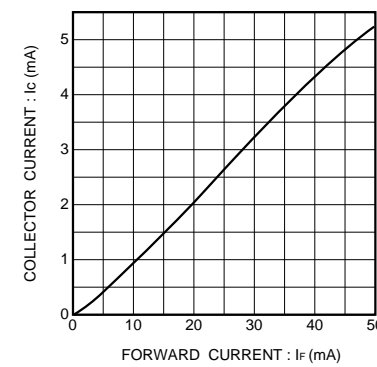


Fig.7 Collector current vs. forward current

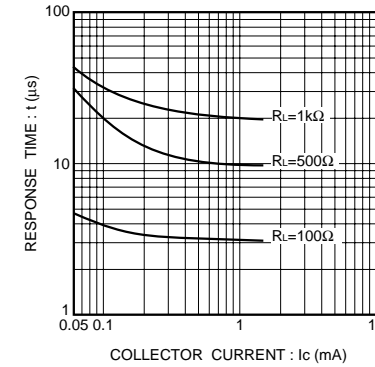


Fig.8 Response time vs. collector current

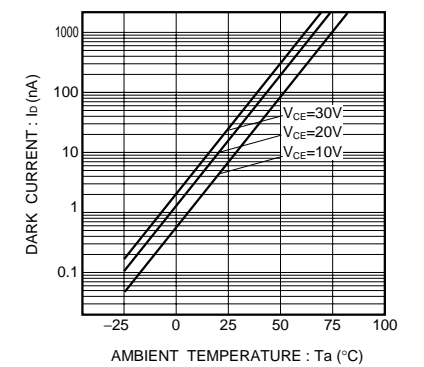


Fig.9 Dark current vs. ambient temperature

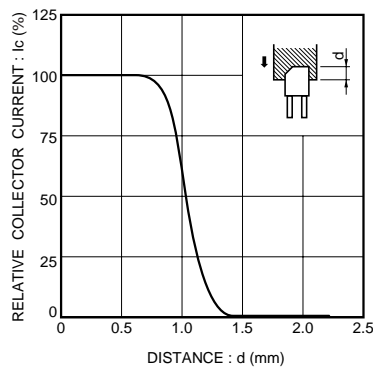


Fig.4 Relative output current vs. distance (II)

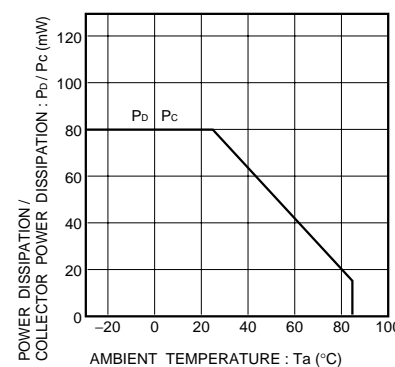


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

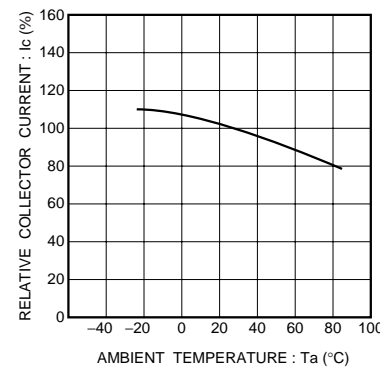


Fig.6 Relative output vs. ambient temperature

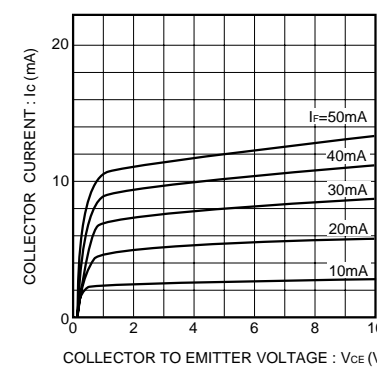


Fig.10 Output characteristics

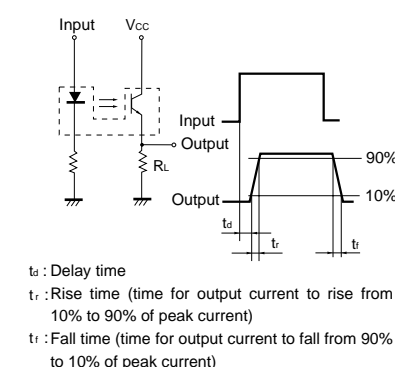
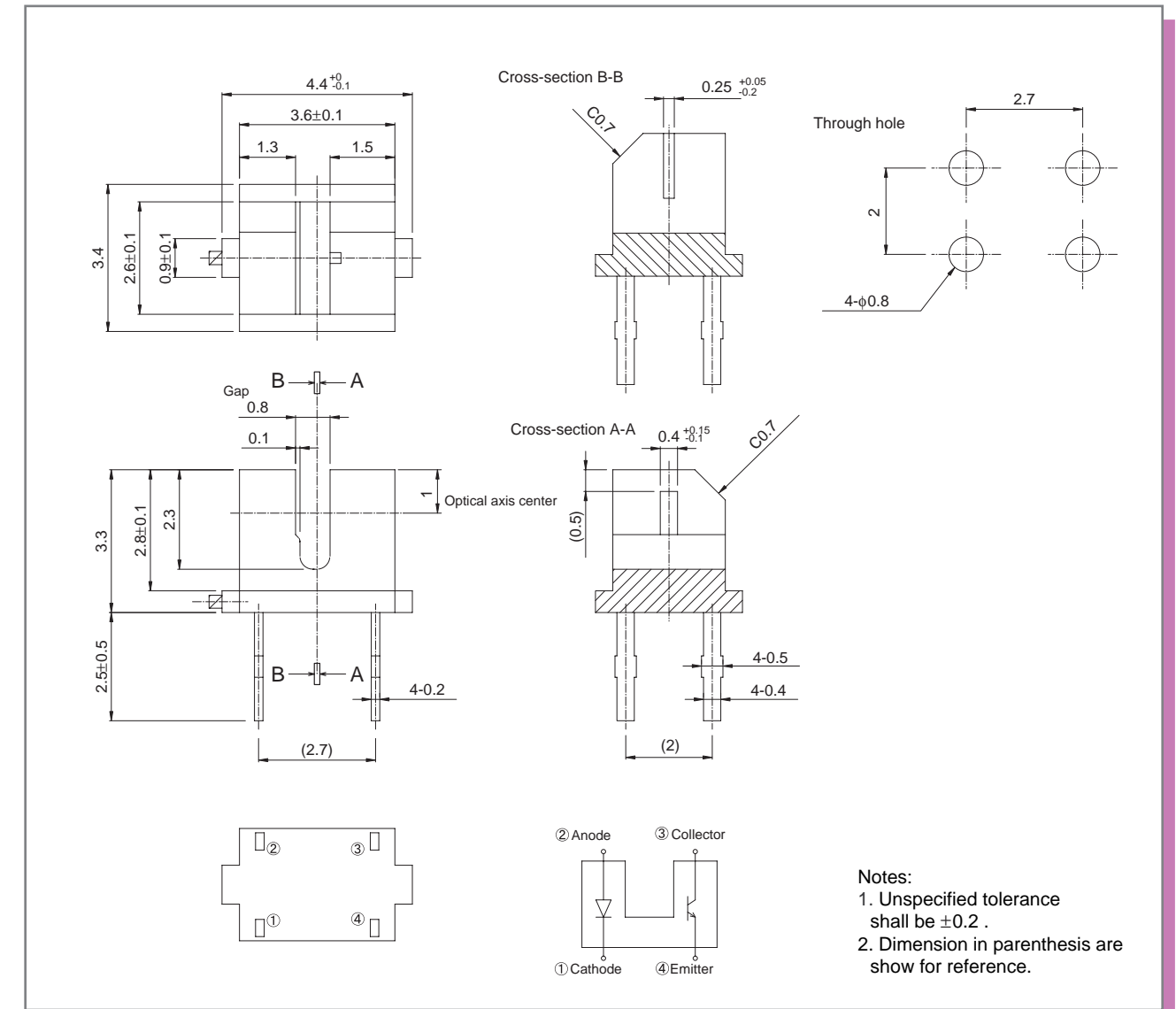


Fig.11 Response time measurement circuit

External dimensions (Unit : mm)



Notes:
1. Unspecified tolerance shall be ±0.2.
2. Dimension in parenthesis are show for reference.

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