

Photointerrupter, General 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 _{CE0}	30	V
Emitter-collector voltage	V _{EC0}	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 +85	°C
Soldering temperture	T _{sol}	260/3 *	°C/sec

* 1mm from the body bottom.

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 _{CE0}	-	-	0.5	μA	V _{CE} =10V
Peak sensitivity wavelength	λ _P	-	800	-	nm	-
Collector current	I _C	0.5	-	-	mA	V _{CE} =5V, I _F =20mA
Collector-emitter saturation voltage	V _{CE(sat)}	-	0.1	0.5	V	I _F =20mA, I _C =0.5mA
Response time	Rise time	t _r	-	10	μs	V _{CC} =5V, I _F =20mA, R _L =100Ω
	Fall time	t _f	-	10	μs	
Cut-off frequency	f _c	-	1	-	MHz	I _F =50mA
Peak light emitting wavelength	λ _P	-	950	-	nm	* Non-coherent Infrared light emitting diode used.
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

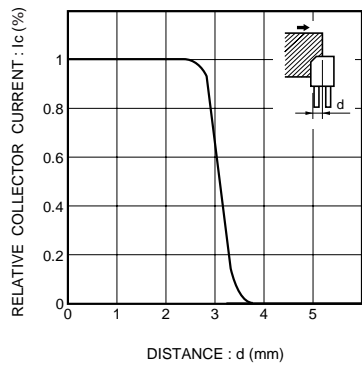


Fig.1 Relative output vs. distance (I)

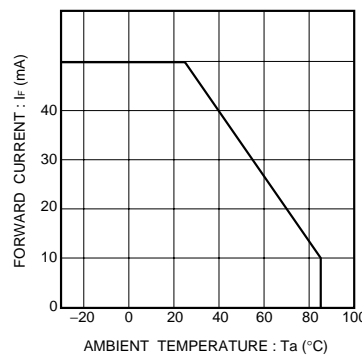


Fig.2 Forward current falloff

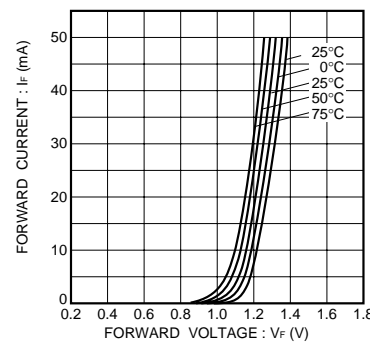


Fig.3 Forward current vs. forward voltage

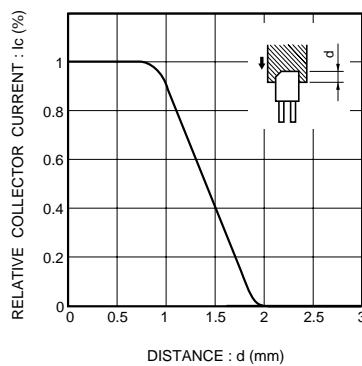


Fig.4 Relative output vs. distance (II)

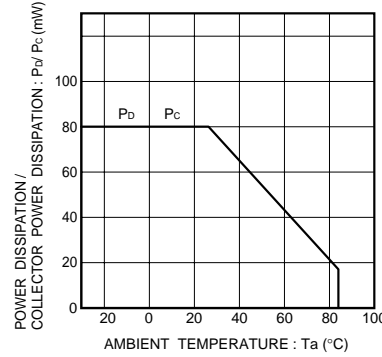


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

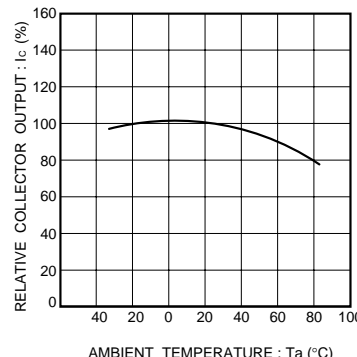
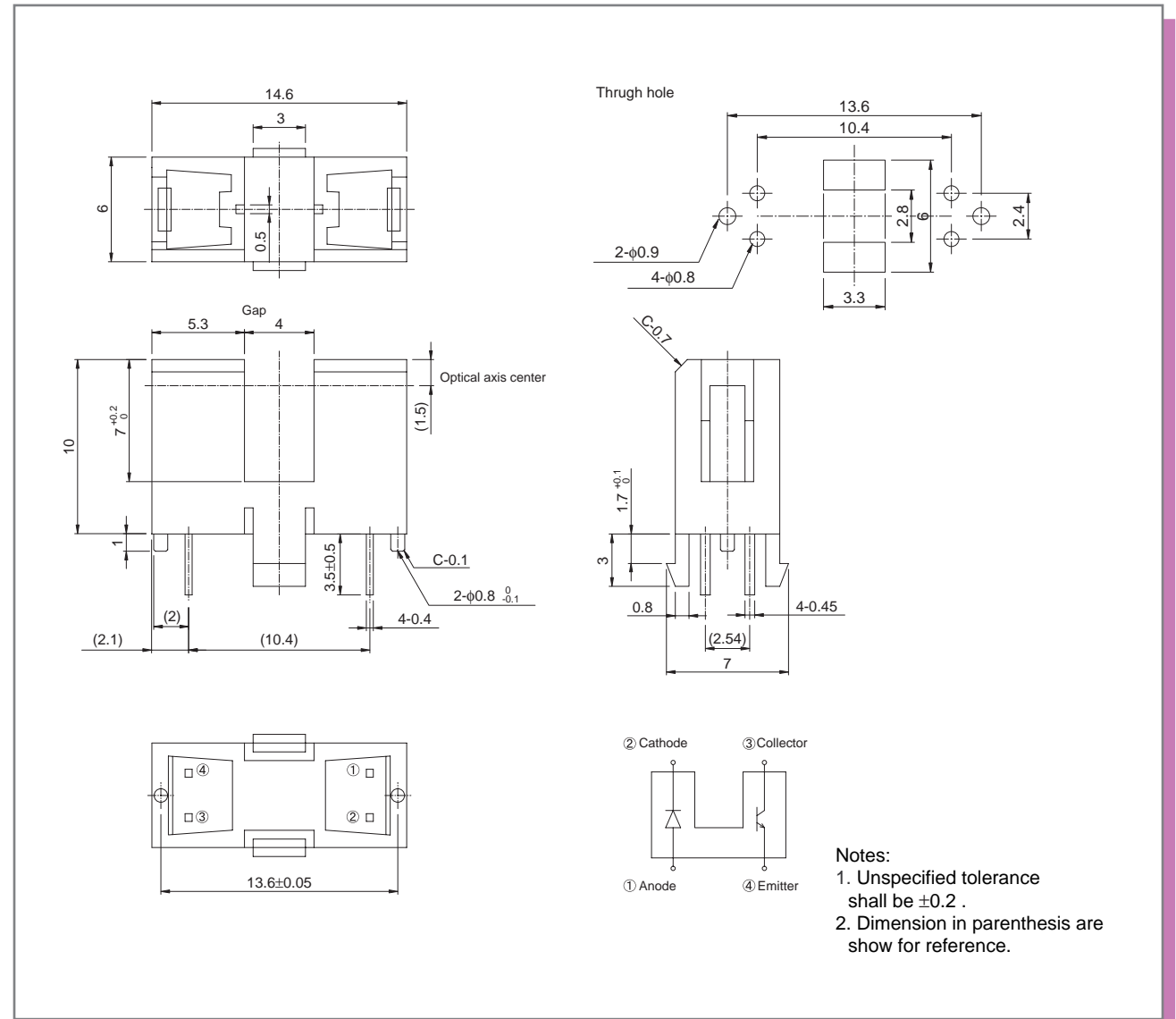


Fig.6 Relative output vs. ambient temperature

External dimensions (Unit : mm)



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

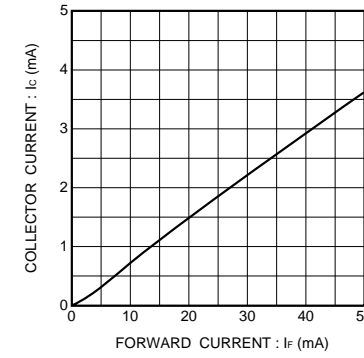


Fig.7 Collector current vs. forward current

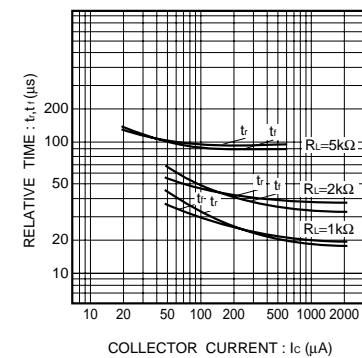


Fig.8 Response time vs. collector current

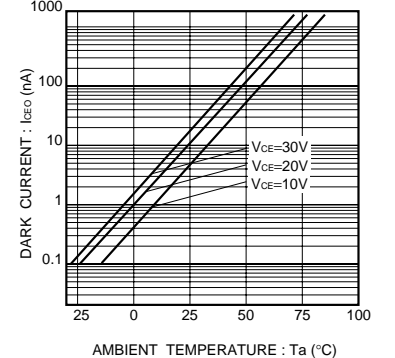


Fig.9 Dark current vs. ambient temperature

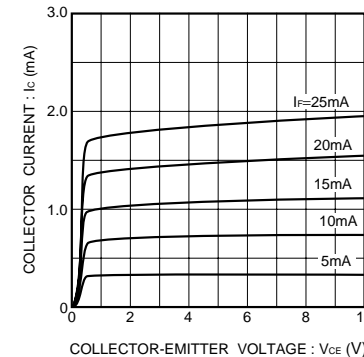


Fig.10 Output characteristics

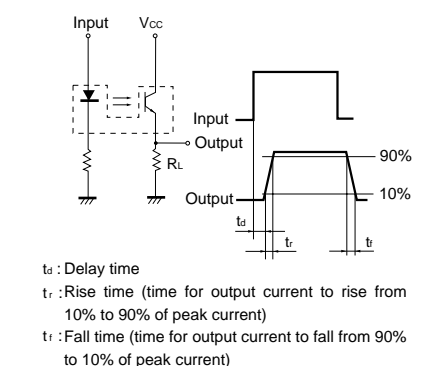


Fig.11 Response time measurement circuit

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