

Photointerrupter, General type



Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Input (LED)	Forward current	IF	50	mA
	Reverse voltage	VR	5	V
	Power dissipation	PD	80	mW
Output (photo-transistor)	Collector-emitter voltage	VCEO	30	V
	Emitter-collector voltage	VECO	4.5	V
	Collector current	IC	30	mA
	Collector power dissipation	PC	80	mW
Operating temperature		Topr	-25 to +85	°C
Storage temperature		Tstg	-40 to +85	°C
Soldering temperture		Tsol	260 / 3 *	°C / s

* 1mm from the body bottom.

Electrical and optical characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input charac-teristics	Forward voltage	VF	-	1.3	1.6	V	IF=50mA
	Reverse current	IR	-	-	10	μA	VR=10V
Output charac-teristics	Dark current	ICEO	-	-	0.5	μA	VCE=10V
	Peak sensitivity wavelength	λP	-	800	-	nm	-
Transfer characteristics	Collector current	IC	0.5	-	-	mA	VCE=5V, IF=20mA
	Collector-emitter saturation voltage	VCE(sat)	-	0.1	0.5	V	IF=20mA, IC=0.1mA
Response time	Rise time	tr	-	10	-	μs	VCC=5V, IF=20mA, RL=100Ω
	Fall time	tf	-	10	-	μs	
Infrared light emitter diode	Cut-off frequency	fC	-	1	-	MHz	IF=50mA
	Peak light emitting wavelength	λP	-	950	-	nm	* Non-coherent Infrared light emitting diode used.
Photo transistor	Response time	tr•tf	-	10	-	μs	VCC=5V, IC=1mA, RL=100Ω * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength	λP	-	800	-	nm	-

Electrical and optical characteristics curves

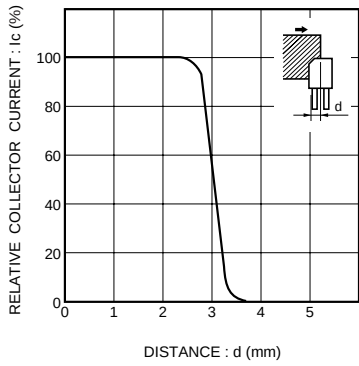


Fig.1 Relative output vs. distance (I)

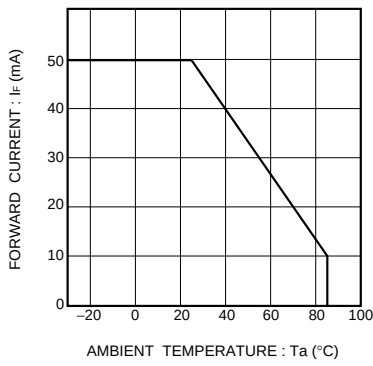


Fig.2 Forward current falloff

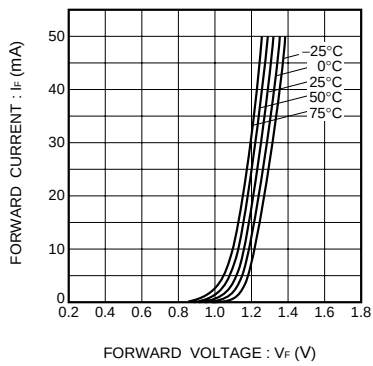


Fig.3 Forward current vs. forward voltage

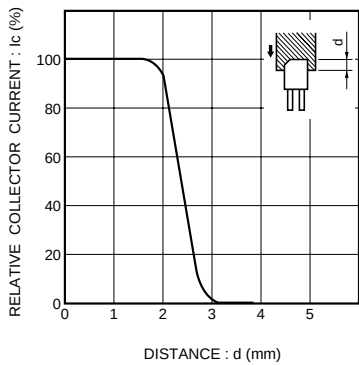


Fig.4 Relative output vs. distance (II)

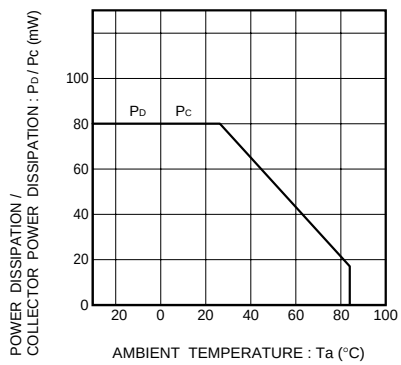


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

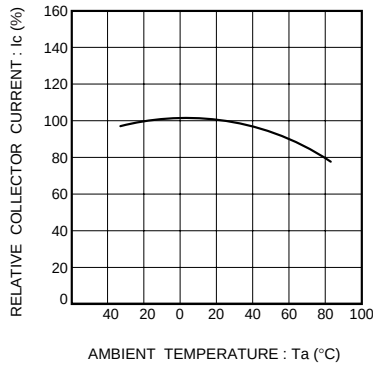
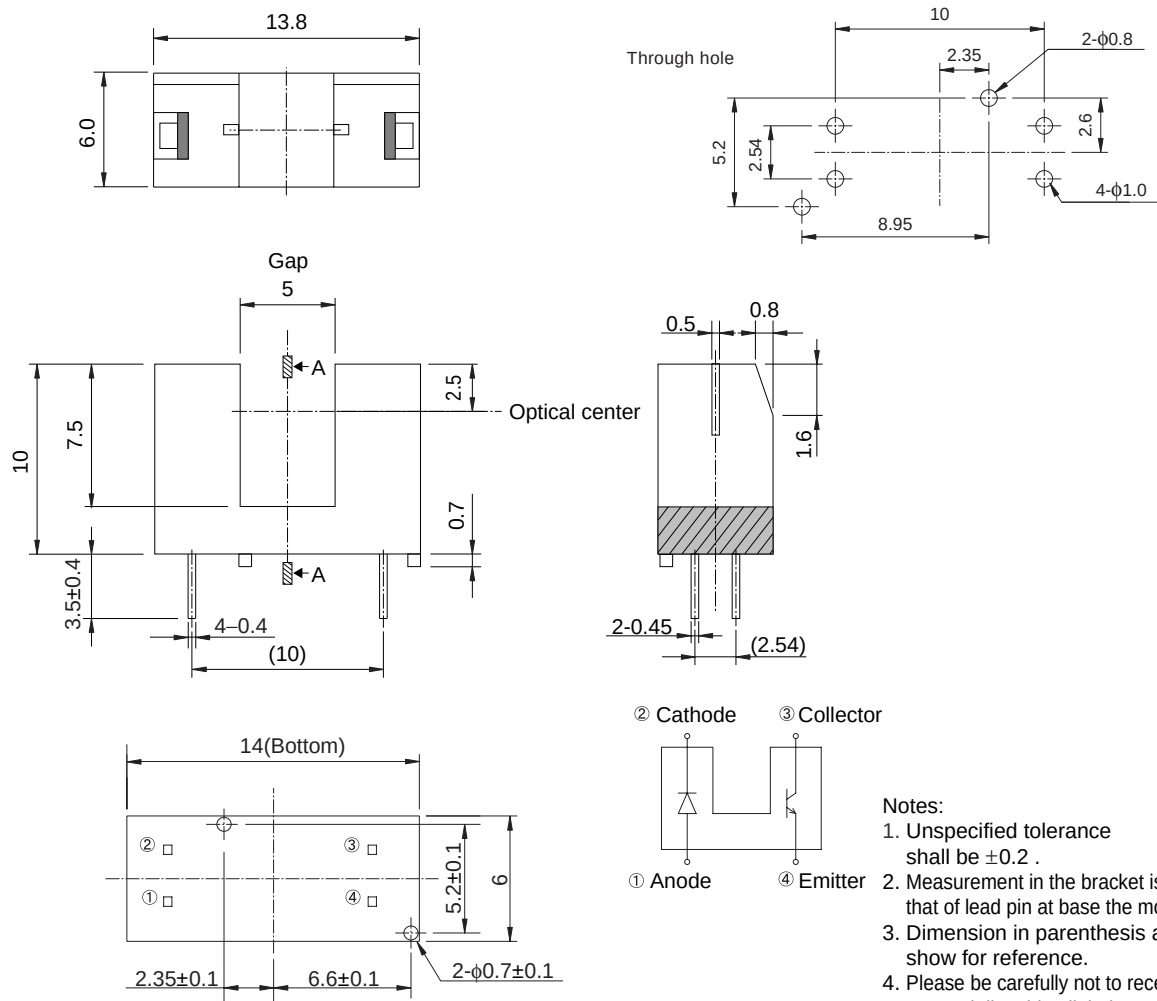


Fig.6 Relative output vs. ambient temperature

External dimensions (Unit : mm)



- Notes:
1. Unspecified tolerance shall be ±0.2 .
 2. Measurement in the bracket is that of lead pin at base the mold.
 3. Dimension in parenthesis are show for reference.
 4. Please be carefully not to receive external disturbing light because the top and back face emitter and detector element isn't covered by case.

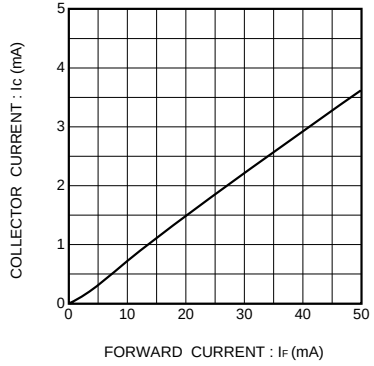


Fig.7 Collector current vs. forward current

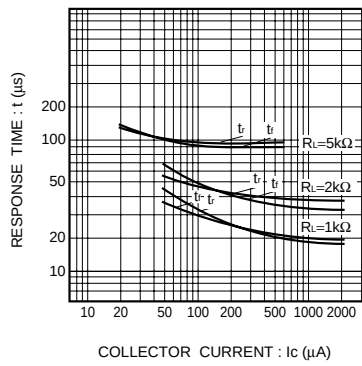


Fig.8 Response time vs. collector current

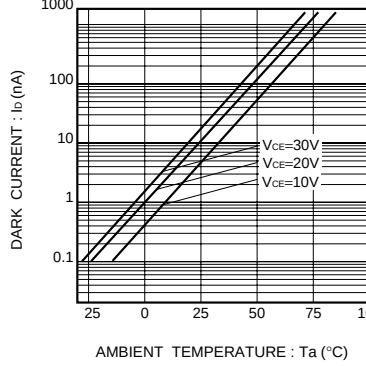


Fig.9 Dark current vs. ambient temperature

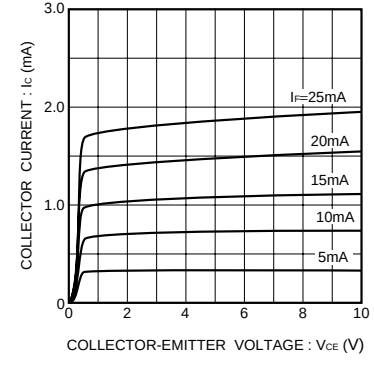


Fig.10 Output characteristics

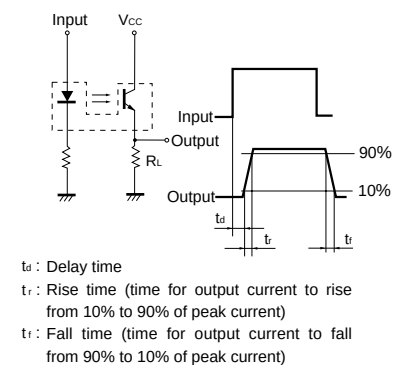


Fig.11 Response time measurement circuit

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