

Photointerrupter, Small 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 +100	°C

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=5V
Output charac-teristics	Dark current	ICEO	-	-	0.5	μA	VCE=10V
	Peak sensitivity wavelength	λP	-	800	-	nm	-
Transfer charac-teristics	Collector current	IC1	0.7	-	-	mA	VCE=5V, IF=20mA
		IC2	0.2	-	-	mA	VCE=5V, IF=5mA
	Collector-emitter saturation voltage	VCE(sat)	-	-	0.3	V	IF=20mA, IC=0.3mA
Infrared light emitter diode	Response time	tr+tf	-	10	-	μs	VCC=5V, IF=20mA, RL=100Ω
	Cut-off frequency	fc	-	1	-	MHz	IF=50mA * Non-coherent Infrared light emitting diode used.
	Peak light emitting wavelength	λP	-	950	-	nm	-
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

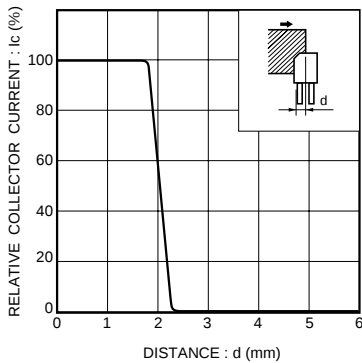


Fig.1 Relative output current vs. distance (I)

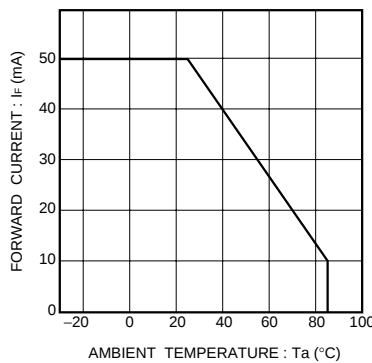


Fig.2 Forward current falloff

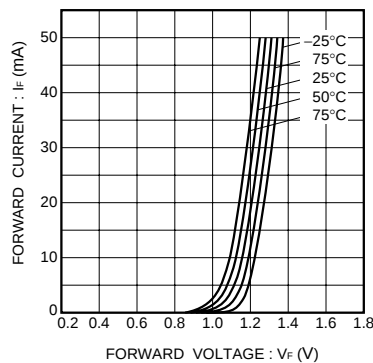


Fig.3 Forward current vs. forward voltage

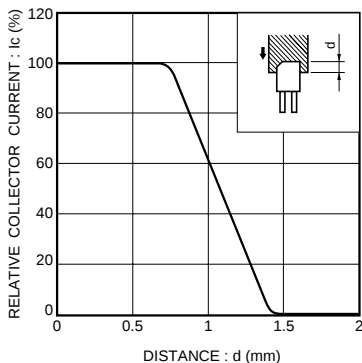


Fig.4 Relative output current vs. distance (II)

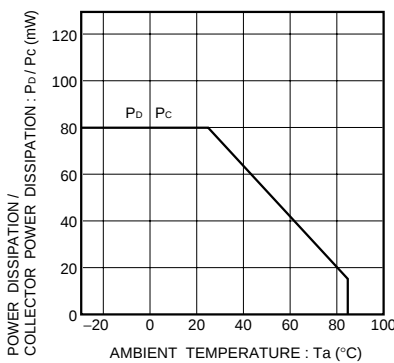


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

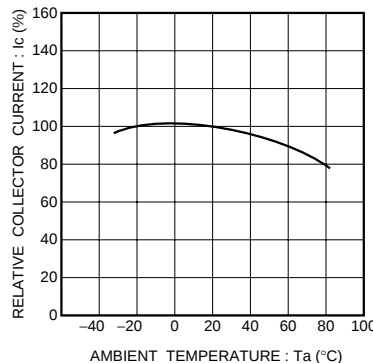
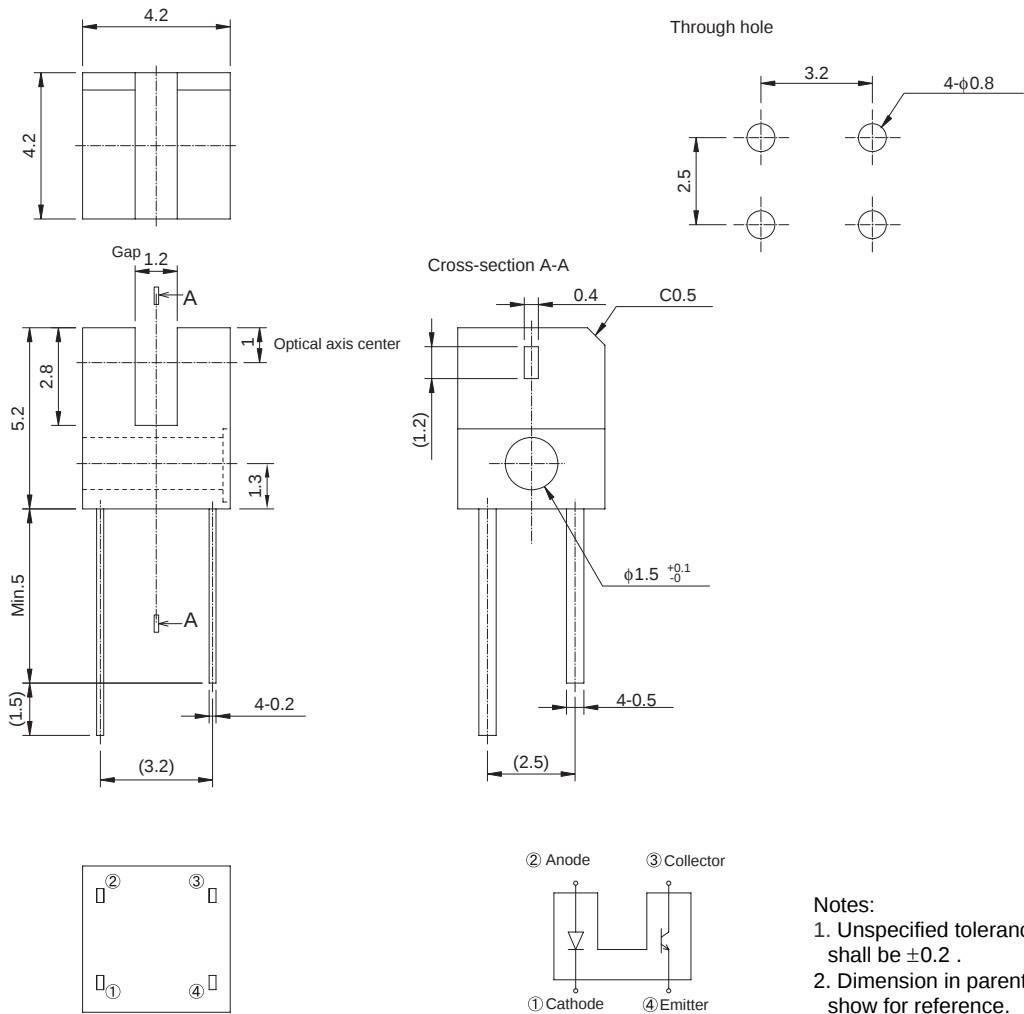


Fig.6 Relative output vs. ambient temperature

External dimensions (Unit : mm)



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

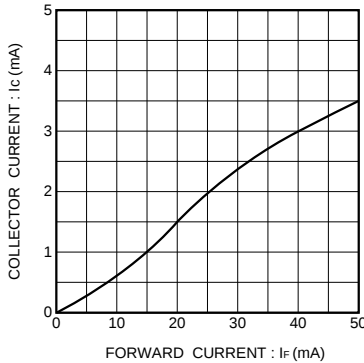


Fig.7 Collector current vs. forward current

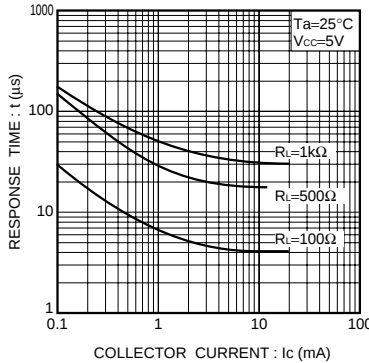


Fig.8 Response time vs. collector current

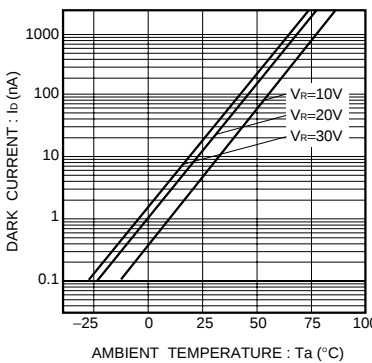


Fig.9 Dark current vs. ambient temperature

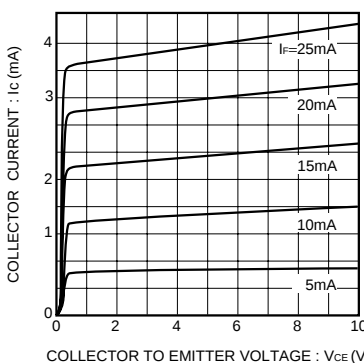


Fig.10 Output characteristics

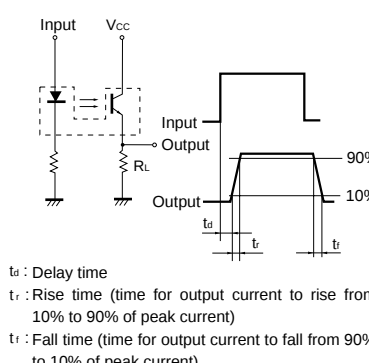


Fig.11 Response time measurement circuit

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