

## Photointerrupter, General type

## Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Forward current	I <sub>F</sub>	50	mA
Reverse voltage	V <sub>R</sub>	5	V
Power dissipation	P <sub>D</sub>	80	mW
Collector-emitter voltage	V <sub>CEO</sub>	30	V
Emitter-collector voltage	V <sub>ECD</sub>	4.5	V
Collector current	I <sub>C</sub>	30	mA
Collector power dissipation	P <sub>C</sub>	80	mW
Operating temperature	T <sub>OPR</sub>	-25 to +85	°C
Storage temperature	T <sub>STG</sub>	-40 to +85	°C
Soldering temperature	T <sub>SOL</sub>	260 / 3 *	°C / s

\* 1mm from the body bottom.



## Applications

Printers  
Facsimiles  
AV equipment

## Features

- 1) Heat resistance (170°C).
- 2) Small gap (0.5mm) and good accuracy.
- 3) Quick response time.
- 4) Filter against visible ray is built-in.

## Electrical and optical characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input characteristics	Forward voltage	V <sub>F</sub>	—	1.3	1.6	V	I <sub>F</sub> =50mA
Output characteristics	Reverse current	I <sub>R</sub>	—	—	10	μA	V <sub>R</sub> =5V
Transfer characteristics	Dark current	I <sub>CEO</sub>	—	—	0.5	μA	V <sub>CE</sub> =10V
Infrared light emitting diode	Peak sensitivity wavelength	λ <sub>P</sub>	—	800	—	nm	—
Photo transistor	Collector current	I <sub>C</sub>	0.5	—	—	mA	V <sub>CE</sub> =5V, I <sub>F</sub> =20mA
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	0.1	0.5	V	I <sub>F</sub> =20mA, I <sub>C</sub> =0.5mA
	Response time	t <sub>r</sub>	—	10	—	μs	V <sub>CC</sub> =5V, I <sub>F</sub> =20mA, R <sub>L</sub> =100Ω
		t <sub>f</sub>	—	10	—	μs	
	Cut-off frequency	f <sub>c</sub>	—	1	—	MHz	I <sub>F</sub> =50mA
	Peak light emitting wavelength	λ <sub>P</sub>	—	950	—	nm	* Non-coherent Infrared light emitting diode used.
	Response time	t <sub>r</sub> •t <sub>f</sub>	—	10	—	μs	V <sub>CC</sub> =5V, I <sub>C</sub> =1mA, R <sub>L</sub> =100Ω * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength	λ <sub>P</sub>	—	800	—	nm	—

## Electrical and optical characteristics curves

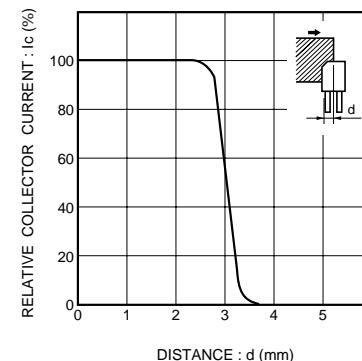


Fig.1 Relative output vs. distance (I)

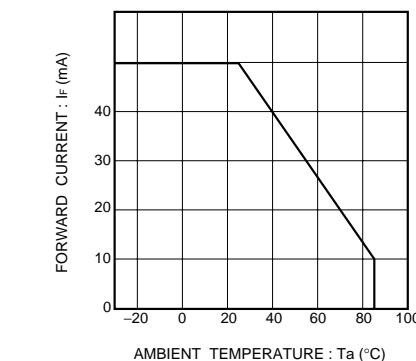


Fig.2 Forward current falloff

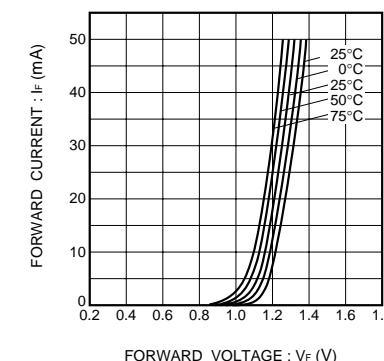


Fig.3 Forward current vs. forward voltage

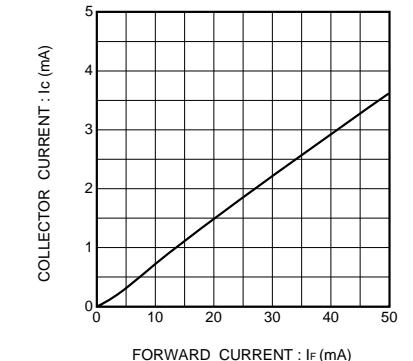


Fig.7 Collector current vs. forward current

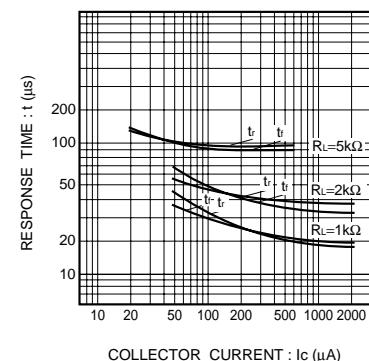


Fig.8 Response time vs. collector current

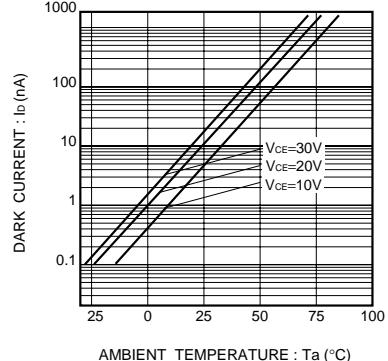


Fig.9 Dark current vs. ambient temperature

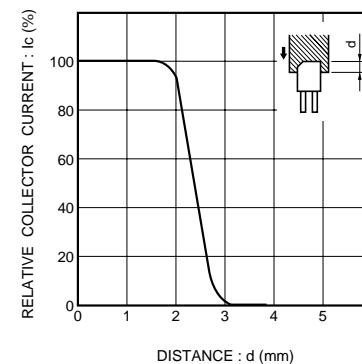


Fig.4 Relative output vs. distance (II)

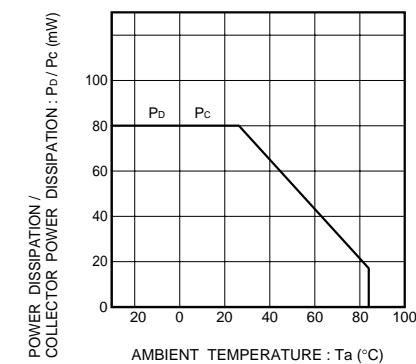


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

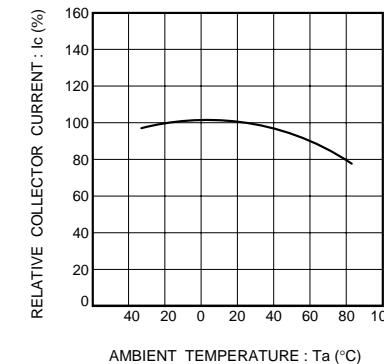


Fig.6 Relative output vs. ambient temperature

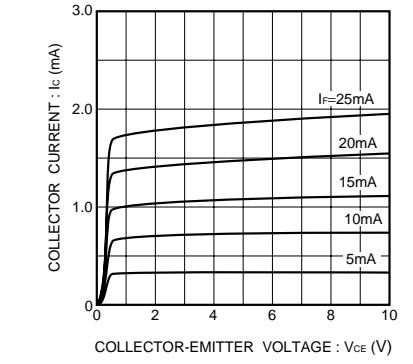


Fig.10 Output characteristics

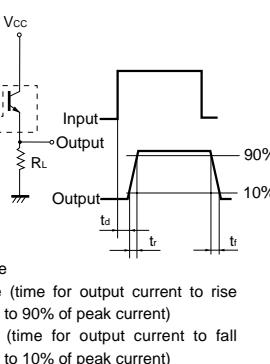
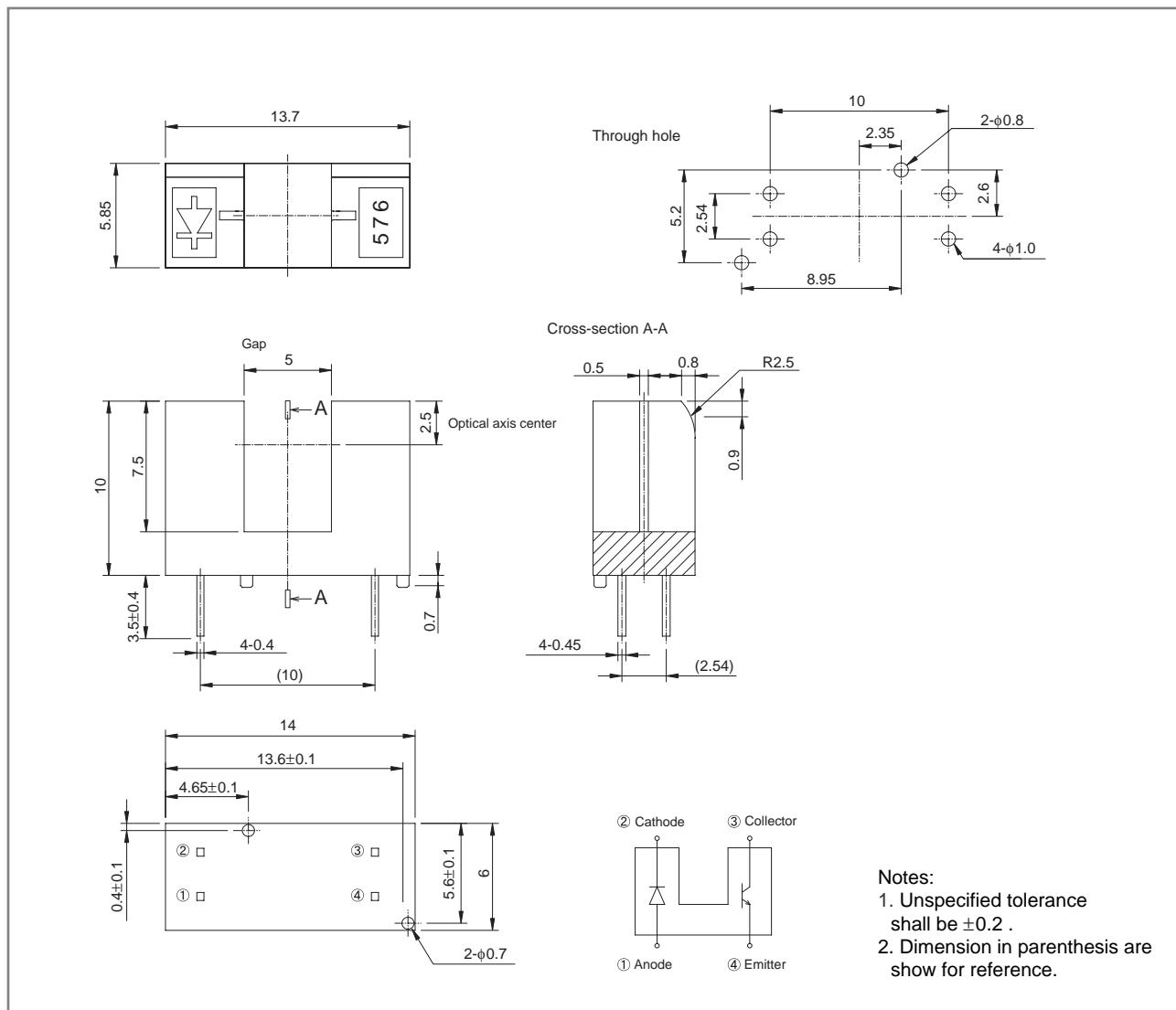


Fig.11 Response time measurement circuit

## External dimensions (Unit : mm)



Notes:

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

## Appendix

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