

Photointerrupter, Ultraminiature SMD type

Absolute maximum ratings (Ta=25°C)

	Parameter	Symbol	Limits	Unit
Input (LED)	Forward current	I <sub>F</sub>	50	mA
	Reverse voltage	V <sub>R</sub>	5	V
	Power dissipation	P <sub>D</sub>	80	mW
Output (photo-transistor)	Collector-emitter voltage	V <sub>CE0</sub>	30	V
	Emitter-collector voltage	V <sub>ECO</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>	-30 to +85	°C
	Storage temperature	T <sub>stg</sub>	-40 to +85	°C

Applications

DSC(Digital steal camera)  
DVC(Digital video camera)  
Digital handy phone

Features

- 1) Ultraminiature SMD type.
- 2) Gap 1.2mm.

Electrical and optical characteristics (Ta=25°C)

	Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input charac-teristics	Forward voltage	V <sub>F</sub>	-	1.5	1.8	V	I <sub>F</sub> =50mA
	Reverse current	I <sub>R</sub>	-	10	10	μA	V <sub>R</sub> =5V
Output charac-teristics	Dark current	I <sub>CEO</sub>	-	0.1	0.1	μA	V <sub>CE</sub> =10V
	Peak sensitivity wavelength	λ <sub>P</sub>	-	800	-	nm	-
Transfer characteristics	Collector current	I <sub>C</sub>	0.15	-	0.75	mA	I <sub>F</sub> =5mA, V <sub>CE</sub> =5V
		I <sub>C</sub>	0.9	-	3.6	mA	I <sub>F</sub> =20mA, V <sub>CE</sub> =5V
	DC leakage current	I <sub>leak</sub>	-	-	5	mA	I <sub>F</sub> =5mA, V <sub>CE</sub> =5V
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.4	V	I <sub>F</sub> =20mA, I <sub>C</sub> =0.1mA
Response time	Rise time	t <sub>r</sub>	-	10	-	μs	V <sub>CC</sub> =5V, I <sub>F</sub> =20mA, R <sub>L</sub> =100Ω
	Fall time	t <sub>f</sub>	-	10	-	μs	
Infrared light emitter diode	Peak light emitting wavelength	λ <sub>P</sub>	-	850	-	nm	I <sub>F</sub> =50mA * 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.
Photo transistor	Maximum sensitivity wavelength	λ <sub>P</sub>	-	800	-	nm	-

Electrical and optical characteristics curves

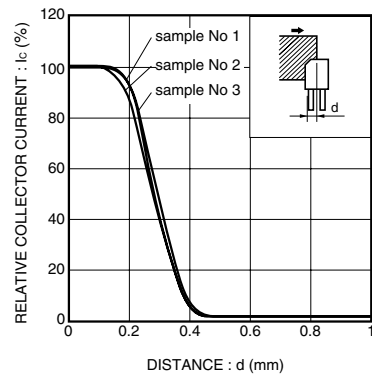


Fig.1 Relative output current vs. distance (I)

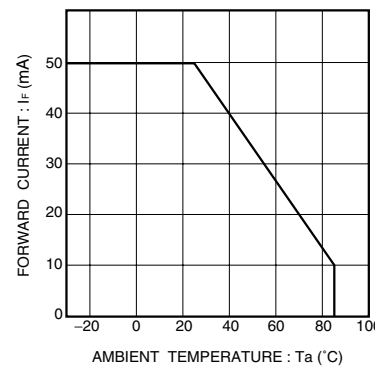


Fig.2 Forward current falloff

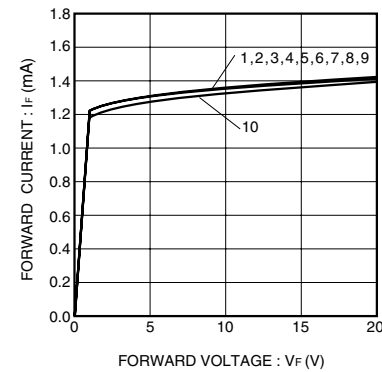


Fig.3 Forward current vs. forward voltage

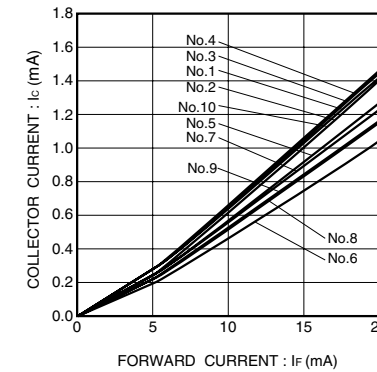


Fig.7 Collector current vs. forward current

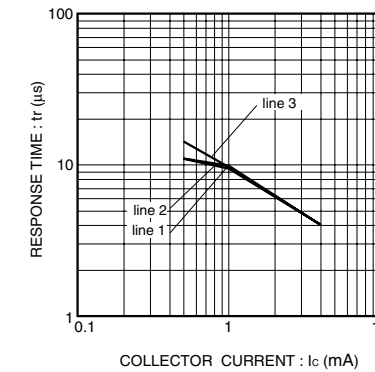


Fig.8 Response time vs. collector current (I)

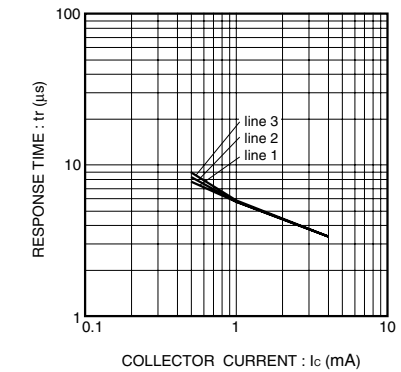


Fig.9 Response time vs. collector current (II)

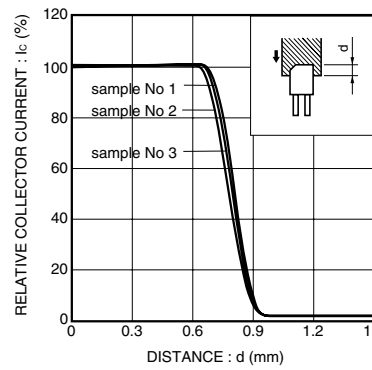


Fig.4 Relative output current vs. distance (II)

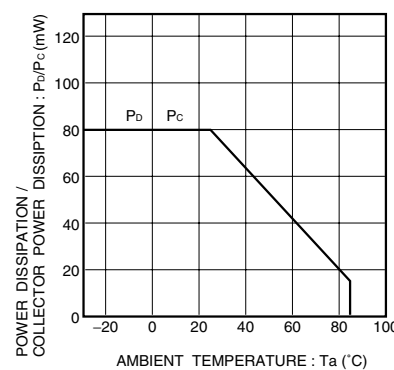


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

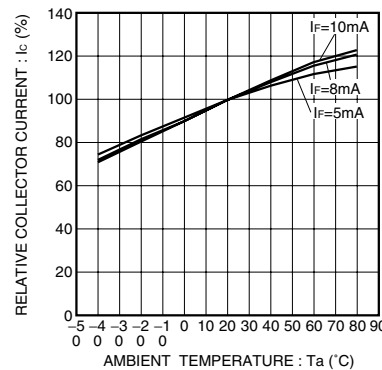


Fig.6 Relative output vs. ambient temperature

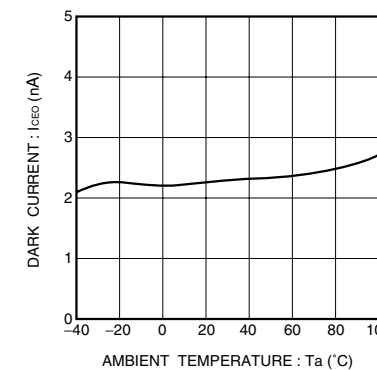


Fig.10 Dark current vs. ambient temperature

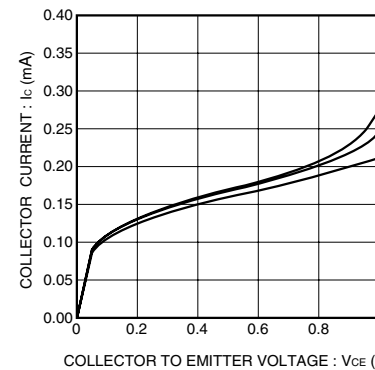
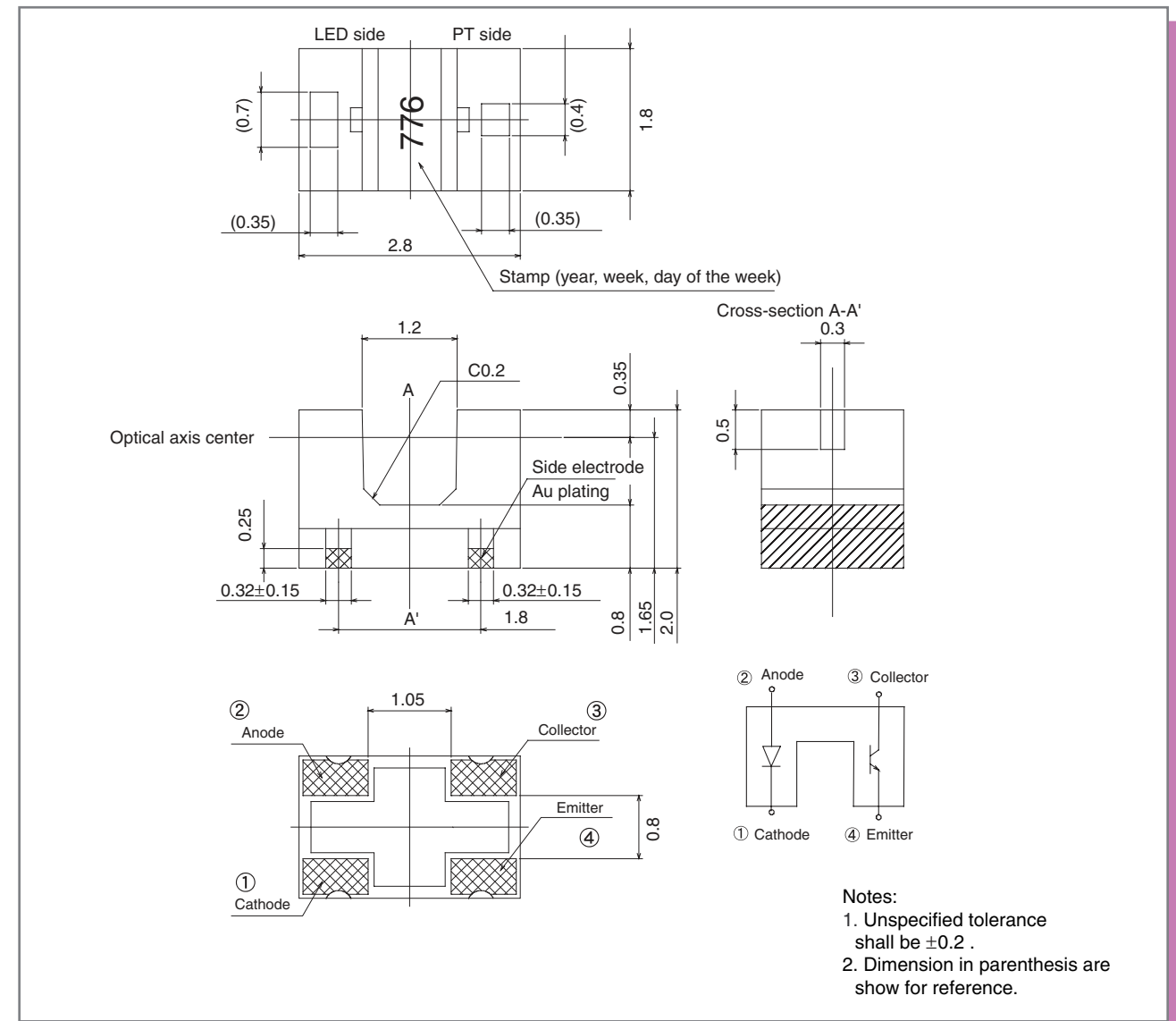


Fig.11 Output characteristics

Dimensions (Unit : mm)



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

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