

Photointerrupter, Small 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>b</sub>	80	mW
Collector-emitter voltage	V <sub>ceo</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>	-25 to +85	°C
Storage temperature	T <sub>stg</sub>	-30 to +85	°C

Applications

- Floppy disk drives
- Movie equipment
- Cameras
- Printers

Features

- 1) Compact package based on the double-mold.
- 2) Method High resolution (slit width = 2.0mm)
- 3) Gap between emitter and detector is 2.0mm.

Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V <sub>f</sub>	-	1.3	1.6	V	I <sub>f</sub> =50mA
Reverse current	I <sub>r</sub>	-	-	10	µA	V <sub>r</sub> =5V
Dark current	I <sub>co</sub>	-	-	0.5	µA	V <sub>co</sub> =10V
Peak sensitivity wavelength	λ <sub>p</sub>	-	800	-	nm	-
Collector current	I <sub>c</sub>	0.35	-	1.2	mA	V <sub>co</sub> =5V, I <sub>f</sub> =20mA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.4	V	I <sub>f</sub> =20mA, I <sub>c</sub> =0.2mA
Response time	t <sub>trf</sub>	-	10	-	µs	V <sub>co</sub> =5V, I <sub>f</sub> =20mA, R <sub>L</sub> =100Ω
Cut-off frequency	f <sub>c</sub>	-	1	-	MHz	I <sub>f</sub> =50mA
Peak light emitting wavelength	λ <sub>p</sub>	-	950	-	nm	I <sub>f</sub> =50mA * Non-coherent Infrared light emitting diode used.
Response time	t <sub>trf</sub>	-	10	-	µs	V <sub>co</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

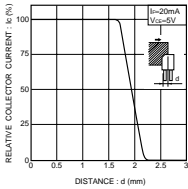


Fig.1 Relative output current vs. distance (l)

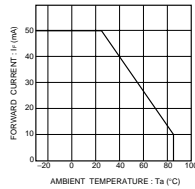


Fig.2 Forward current falloff

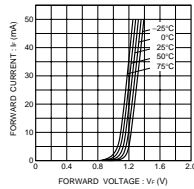


Fig.3 Forward current vs. forward voltage

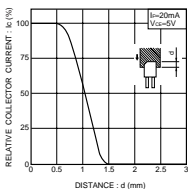


Fig.4 Relative output current vs. distance (l)

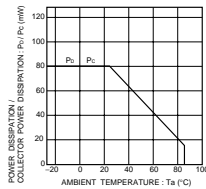


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

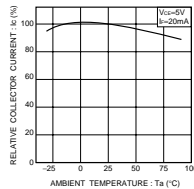
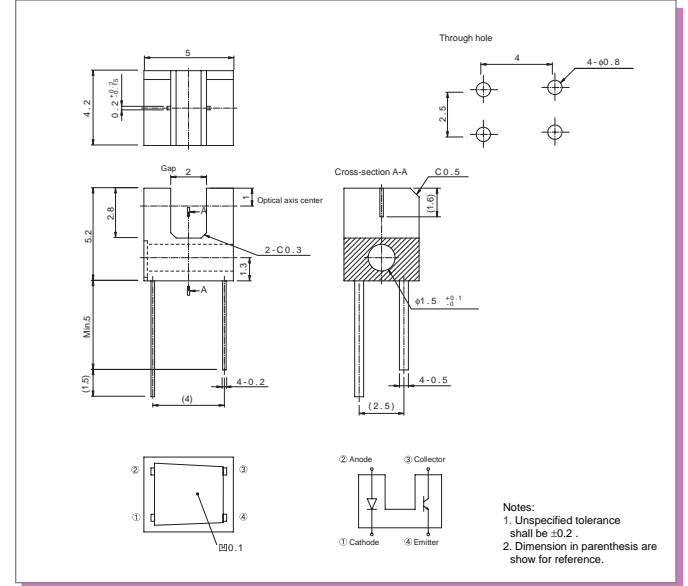


Fig.6 Relative output vs. ambient temperature

External dimensions (Unit : mm)



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

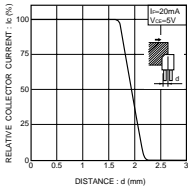


Fig.7 Collector current vs. forward current

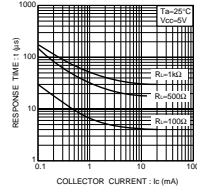


Fig.8 Response time vs. collector current

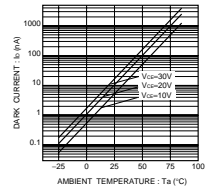


Fig.9 Dark current vs. ambient temperature

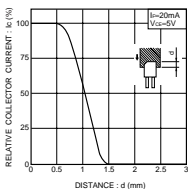


Fig.10 Output characteristics

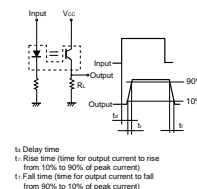


Fig.11 Response time measurement circuit

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