

Photointerrupter, Small type



Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Input (LED)	Forward current	I_F	50	mA
	Reverse voltage	V_R	5	V
	Power dissipation	P_D	80	mW
Output (photo-transistor)	Collector-emitter voltage	V_{CE0}	30	V
	Emitter-collector voltage	V_{ECO}	4.5	V
	Collector current	I_C	30	mA
	Collector power dissipation	P_C	80	mW
	Operating temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-30 to +100	°C	

Applications

Floppy disk drives
Printers
CD-ROM

Features

- 1) Compact package based on the double-mold method.
- 2) High resolution (slit width = 0.4mm)
- 3) Gap between emitter and detector is 2.0mm.

Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Input charac-teristics	Forward voltage	V_F	-	1.3	1.6	V	$I_F=50mA$
	Reverse current	I_R	-	-	10	μA	$V_R=5V$
Output charac-teristics	Dark current	I_{CEO}	-	-	0.5	μA	$V_{CE}=10V$
	Peak sensitivity wavelength	λ_P	-	800	-	nm	-
Transfer charac-teristics	Collector current	I_C	0.5	-	-	mA	$V_{CE}=5V, I_F=20mA$
	Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_F=20mA, I_C=0.3mA$
	Response time	$tr+tf$	-	10	-	μs	$V_{CC}=5V, I_F=20mA, R_L=100\Omega$
Infrared light emitter diode	Cut-off frequency	f_c	-	1	-	MHz	$I_F=50mA$ * Non-coherent Infrared light emitting diode used.
	Peak light emitting wavelength	λ_P	-	950	-	nm	-
Photo transistor	Response time	$tr+tf$	-	10	-	μs	$V_{CC}=5V, I_C=1mA, R_L=100\Omega$ * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength	λ_P	-	800	-	nm	-

Electrical and optical characteristics curves

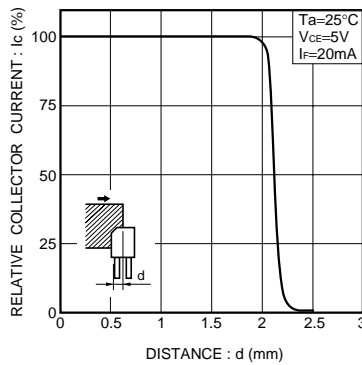


Fig.1 Relative output current vs. distance (I)

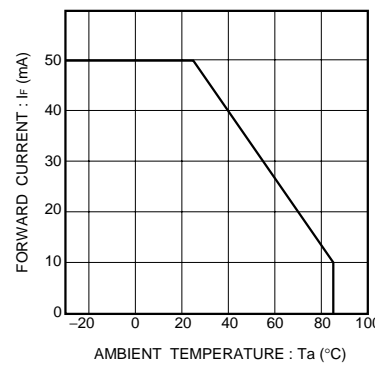


Fig.2 Forward current falloff

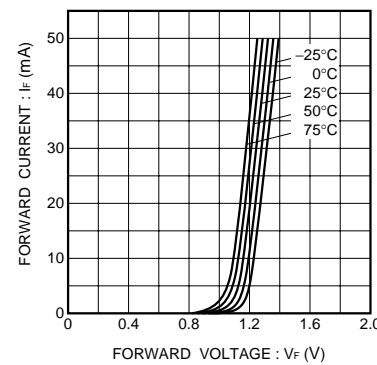


Fig.3 Forward current vs. forward voltage

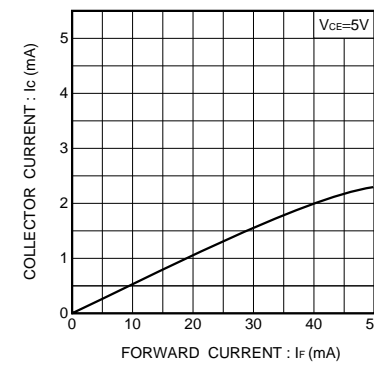


Fig.7 Collector current vs. forward current

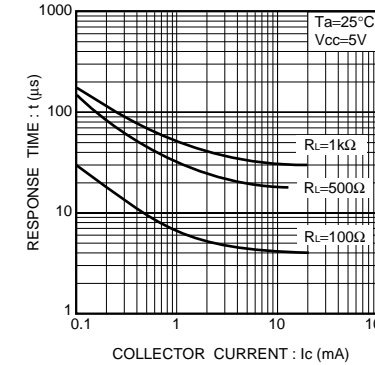


Fig.8 Response time vs. collector current

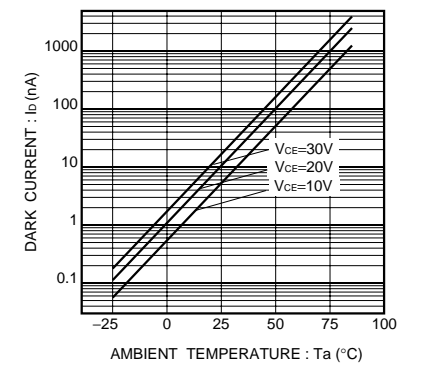


Fig.9 Dark current vs. ambient temperature

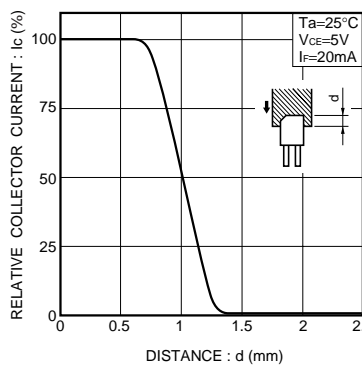


Fig.4 Relative output current vs. distance (II)

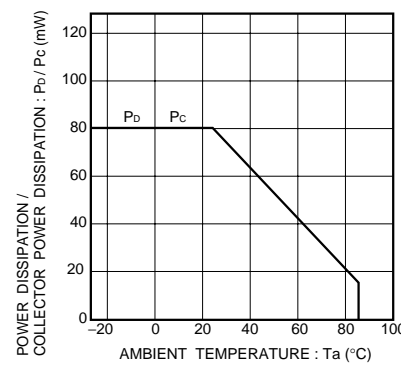


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

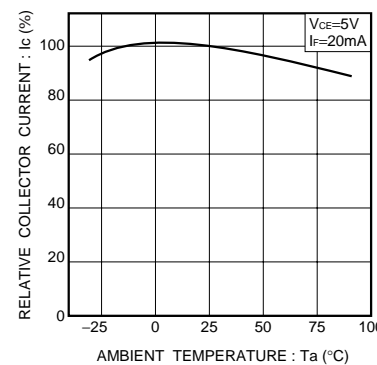


Fig.6 Relative output vs. ambient temperature

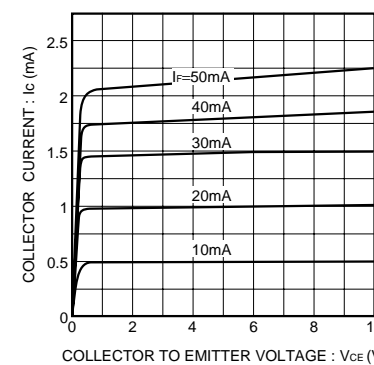


Fig.10 Output characteristics

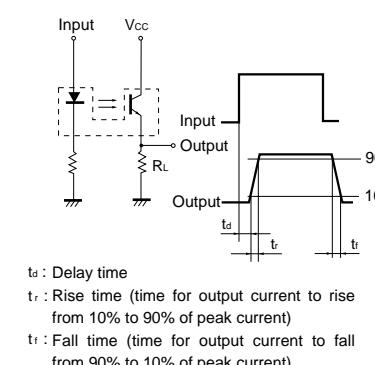
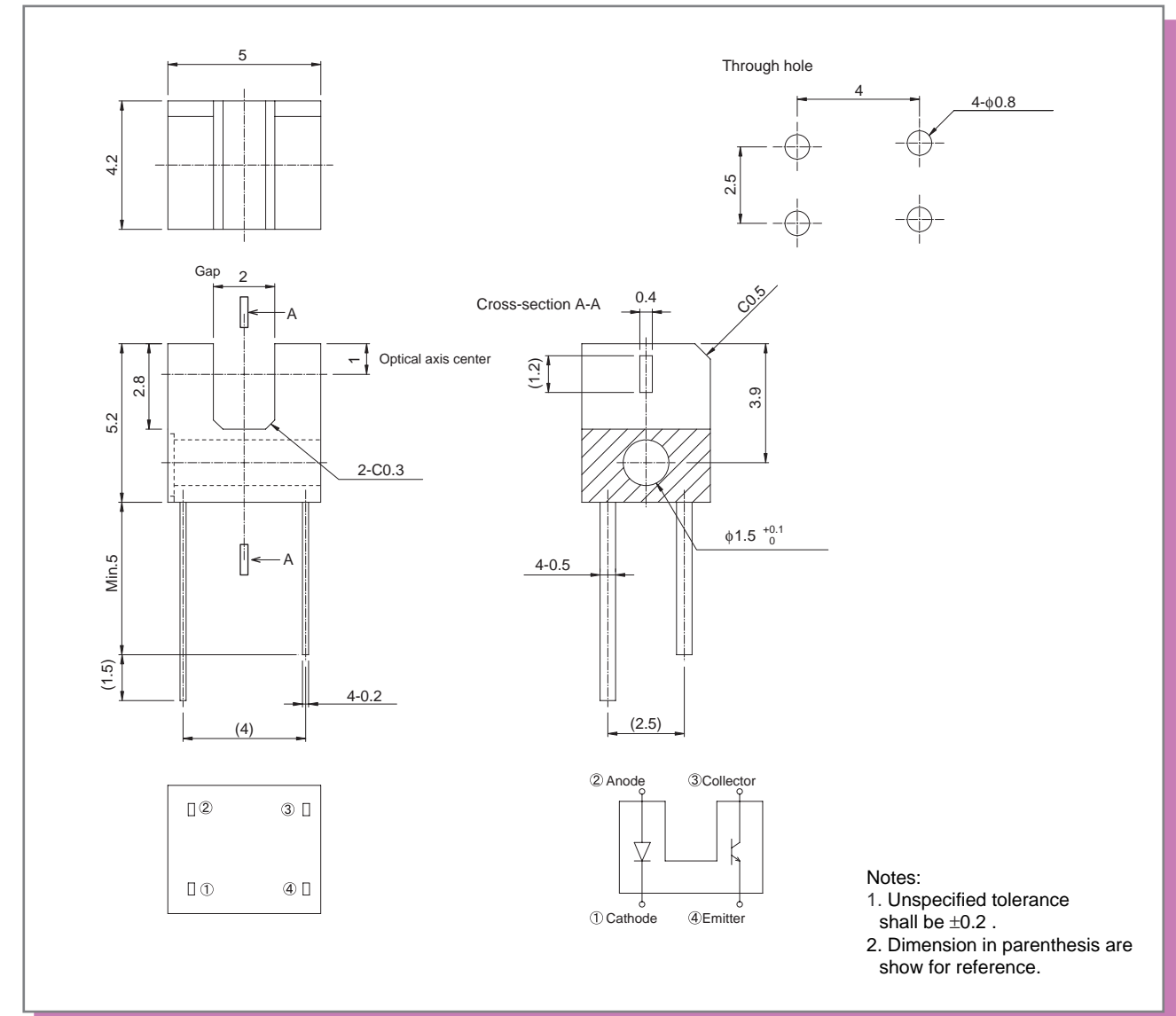


Fig.11 Response time measurement circuit

External dimensions (Unit : mm)



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

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