Photointerrupter, Small type

Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Input (LED)	Forward current	lF	50	mA
	Reverse voltage	VR	5	V
	Power dissipation	P□	80	mW
Output (photo- (transistor)	Collector-emitter voltage	VCEO	30	V
	Emitter-collector voltage	Veco	4.5	V
	Collector current	lc	30	mA
	Collector power dissipation	Pc	80	mW
Operating temperature		Topr	-25 to +85	°C
Storage temperature		Tstg	-30 to +100	°C

Applications

Optical control equipment Floppy disk drives Digital video disc

- Features

- 2) Minimal influence from stray light.3) Low collector-emitter saturation voltage.

Electrical and optical characteristics (Ta=25°C)

Parameter		Symbol	Min.	Тур.	Max.	Unit	Conditions	
Input charac- teristics	Forward voltage	VF	-	1.3	1.6	٧	I==50mA	
	Reverse current	lR	-	-	10	μΑ	V _R =5V	
Output charac- teristics	Dark current	Iceo	-	-	0.5	μΑ	VcE=10V	
	Peak sensitivity wavelength	λр	-	800	-	nm	_	
Transfer charac- teristics	Collector current	lc	0.18	0.3	0.95	mA	Vce=5V, Ir=10mA	
	Collector-emitter saturation voltage	VCE(sat)	-	-	0.4	V	I _F =20mA, I _C =0.1mA	
	Response time	tr•tf	-	10	-	μs	Vcc=5V, I=20mA, RL=100Ω	
Infrared light emitter diode	Cut-off frequency	fc	-	1	-	MHz	Ir=50mA * Non-coherent Infrared light emitting diode used.	
	Peak light emitting wavelength	λР	-	950	-	nm		
Photo transistor	Response time	tr-tf	-	10	-	μs	$\begin{array}{c} V_{CC}\!=\!5V,\ l_{C}\!=\!1mA,\ R_{L}\!=\!100\Omega\\ *\ This\ product\ is\ not\ designed\ to\ be\ protected\ against\ electromagnetic\ wave. \end{array}$	
	Maximum sensitivity wavelength	λρ	_	800	-	nm	-	

Electrical and optical characteristics curves

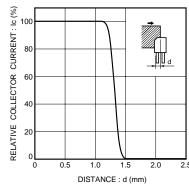


Fig.1 Relative output current vs.

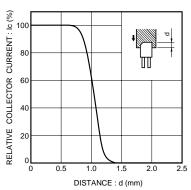


Fig.4 Relative output current vs. distance (II)

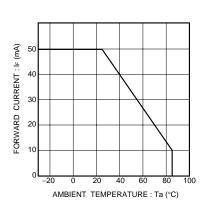


Fig.2 Forward current falloff

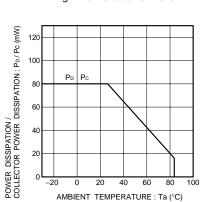


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

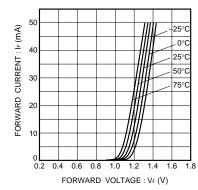


Fig.3 Forward current vs. forward voltage

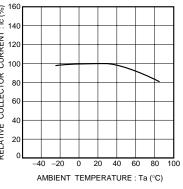
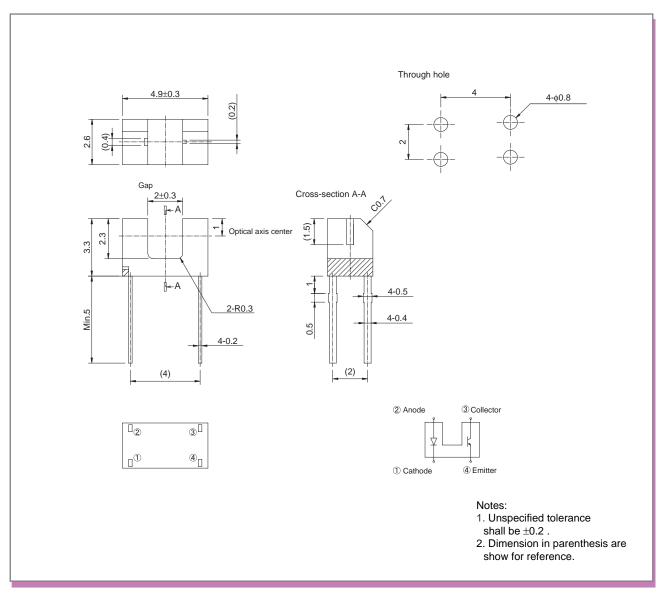


Fig.6 Relative output vs. ambient

External dimensions (Unit : mm)



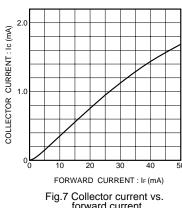


Fig.7 Collector current vs. forward current

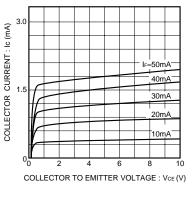


Fig.10 Output characteristics

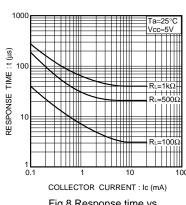


Fig.8 Response time vs. collector current

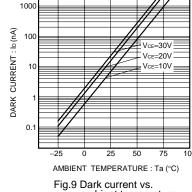
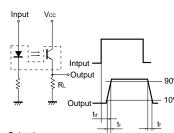


Fig.9 Dark current vs. ambient temperature



- t_d : Delay time
- t_r: Rise time (time for output current to rise from 10% to 90% of peak current)
- $t_{\mbox{\scriptsize f}}$: Fall time (time for output current to fall

Fig.11 Response time measurement circuit

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