

Photointerrupter, Ultraminiature SMD 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}	-30 to +85
Storage temperature	T _{stg}	-40 to +85	°C

Applications

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

Features

- 1) Ultraminiature middle size 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 _F	1.8	2.3	V	I _F =50mA	
	Reverse current	I _R	-	10	μA	V _R =5V	
	Dark current	I _{CEO}	-	0.1	μA	V _{CE} =10V	
Output charac-teristics	Peak sensitivity wavelength	λ _P	800	-	nm	-	
	Collector current	I _C	0.1	-	mA	V _{CE} =5V, I _F =5mA	
Transfer characteristics	Collector-emitter saturation voltage	V _{CE(sat)}	-	0.4	V	I _F =20mA, I _C =0.1mA	
	Response time	Rise time	t _r	30	150	μs	V _{CC} =5V, I _F =0.1mA, R _L =1000Ω
		Fall time	t _f	30	150	μs	
Infrared light emitter diode	Peak light emitting wavelength	λ _P	850	-	nm	I _F =50mA * Non-coherent Infrared light emitting diode used.	
	Response time	t _r -t _f	50	-	μs	V _{CC} =5V, I _C =0.1mA, R _L =1000Ω * This product is not designed to be protected against electromagnetic wave.	
Photo transistor	Maximum sensitivity wavelength	λ _P	800	-	nm	-	

Electrical and optical characteristics curves

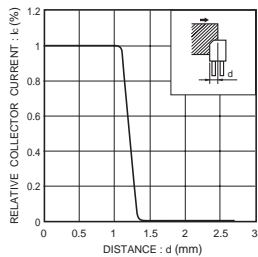


Fig.4 Relative output current vs. distance (II)

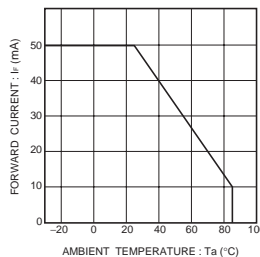


Fig.2 Forward current falloff

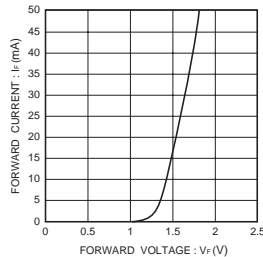


Fig.3 Forward current vs. forward voltage

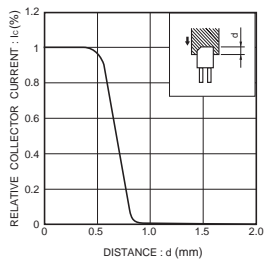


Fig.1 Relative output current vs. distance (I)

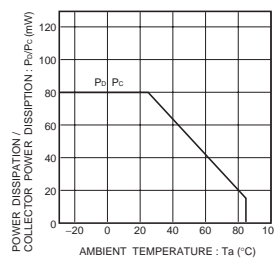


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

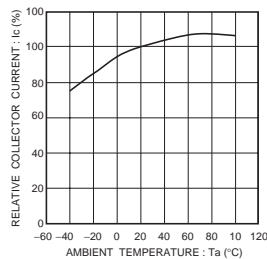


Fig.6 Relative output vs. ambient temperature

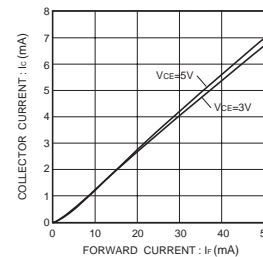


Fig.7 Collector current vs. forward current

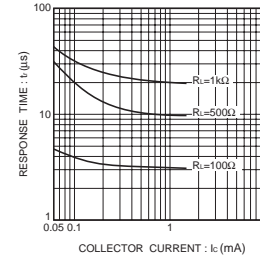


Fig.8 Response time vs. collector current

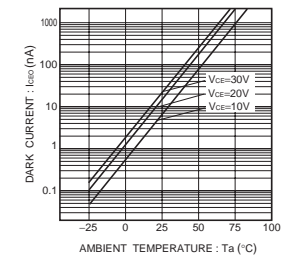


Fig.9 Dark current vs. ambient temperature

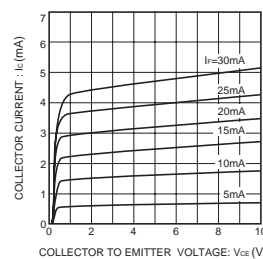


Fig.10 Output characteristics

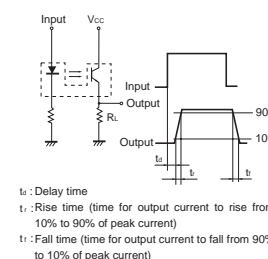
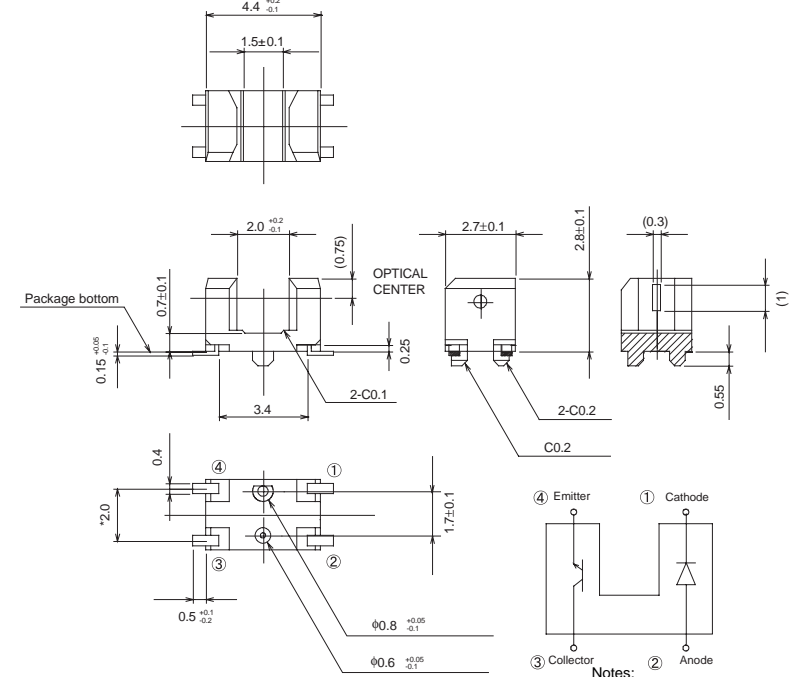


Fig.11 Response time measurement circuit

Dimensions (Unit : mm)



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

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