

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 (phototransistor)	Collector-emitter voltage	V _{CEO}	30 V
	Emitter-collector voltage	V _{ECD}	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 +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 characteristics	Forward voltage	V _F	—	1.3	1.6 V	I _F =50mA
	Reverse current	I _R	—	—	10 μA	V _R =5V
	Dark current	I _{CEO}	—	—	0.5 μA	V _{CEO} =10V
	Peak sensitivity wavelength	λ _P	—	800	— nm	—
Transfer characteristics	Collector current	I _C	0.95	—	4.95 mA	V _{CE} =5V, I _F =20mA
	Collector-emitter saturation voltage	V _{CE(sat)}	—	—	0.4 V	I _F =20mA, I _C =0.1mA
	Rise time	tr	—	10	— μs	V _{CC} =5V, I _F =20mA, R _L =100Ω
	Fall time	tf	—	10	— μs	
Infrared light emitting 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 =100Ω * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength	λ _P	—	800	— nm	

Electrical and optical characteristics curves

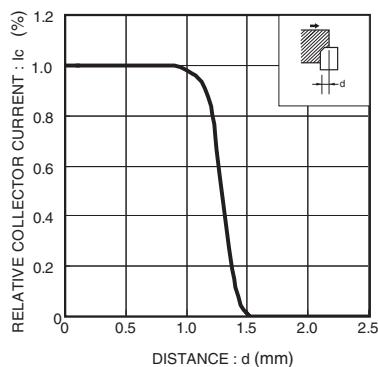


Fig.1 Relative output current vs. distance (I)

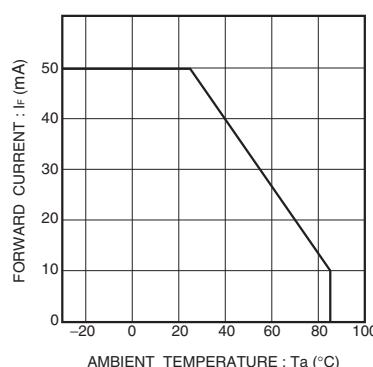


Fig.2 Forward current falloff

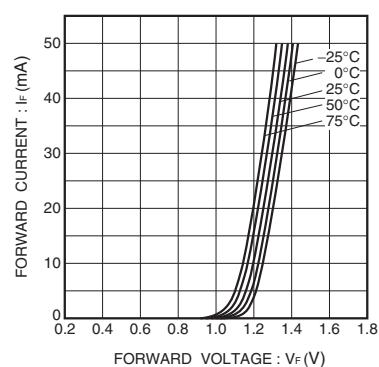


Fig.3 Forward current vs. forward voltage

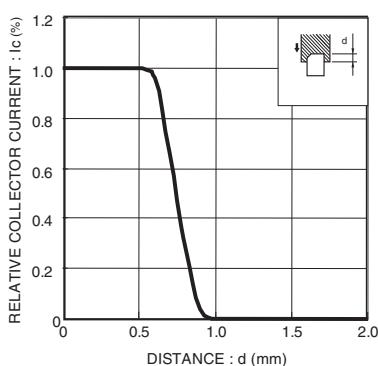


Fig.4 Relative output current vs. distance (II)

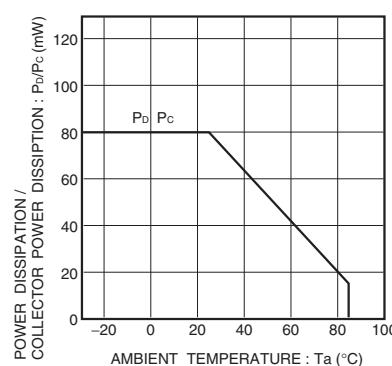


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

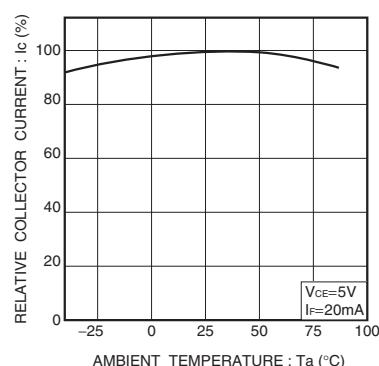


Fig.6 Relative output vs. ambient temperature

Dimensions (Unit : mm)

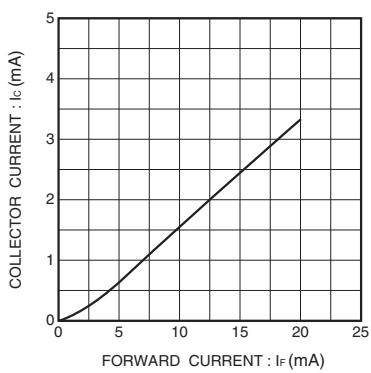
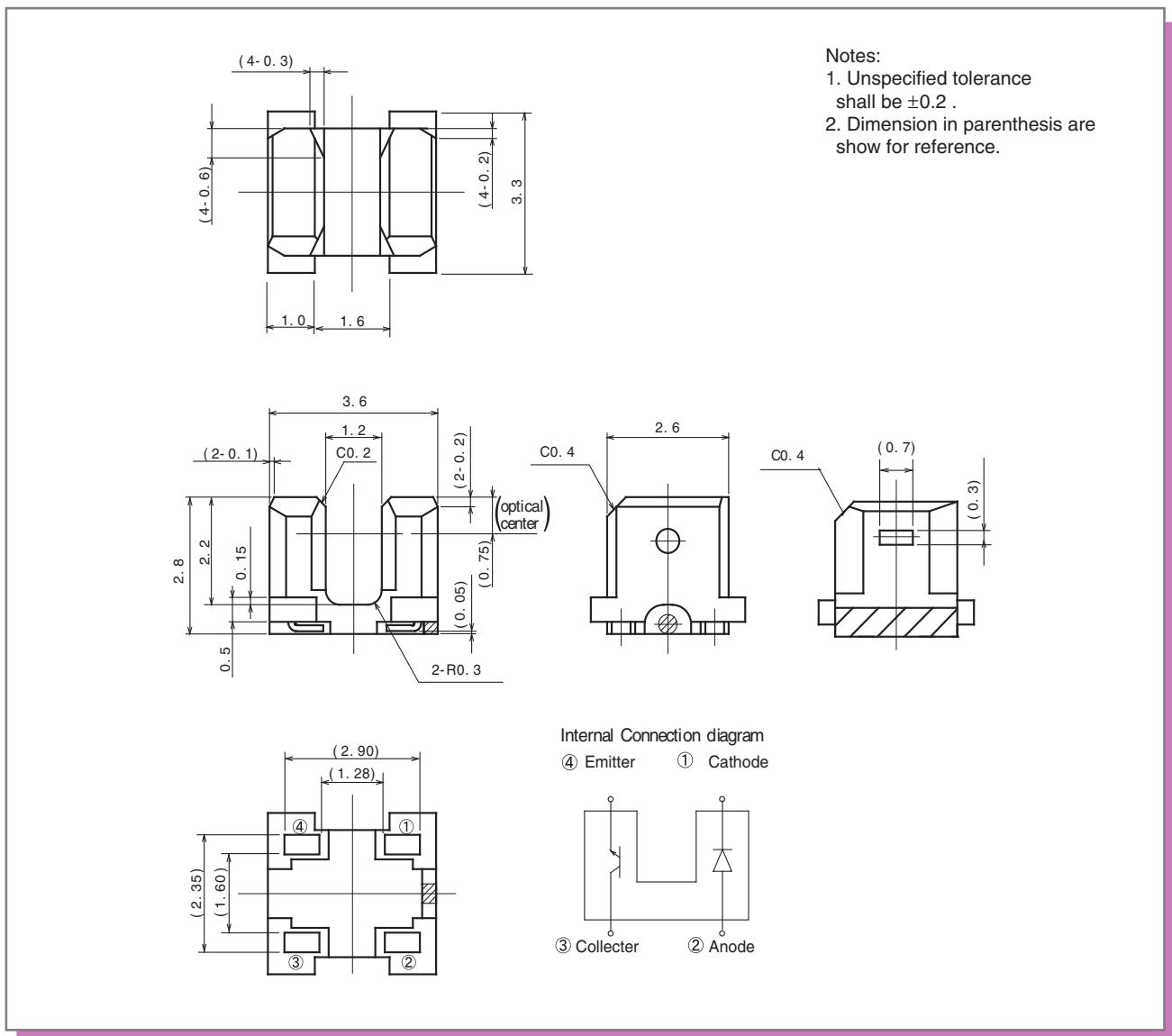


Fig.7 Collector current vs. forward current

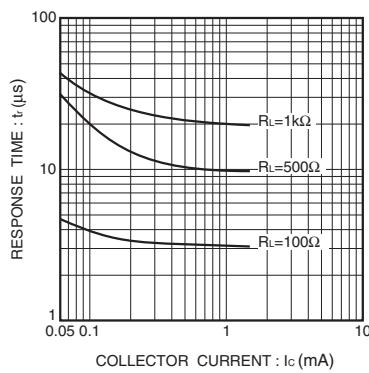


Fig.8 Response time vs. collector current

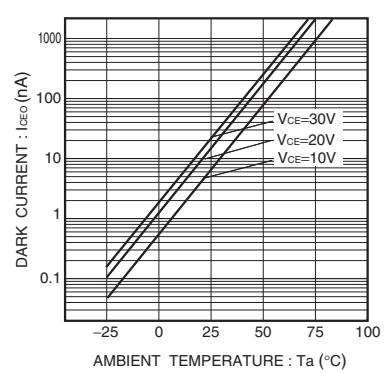


Fig.9 Dark current vs. ambient temperature

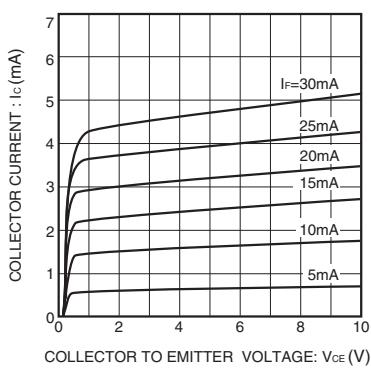


Fig.10 Output characteristics

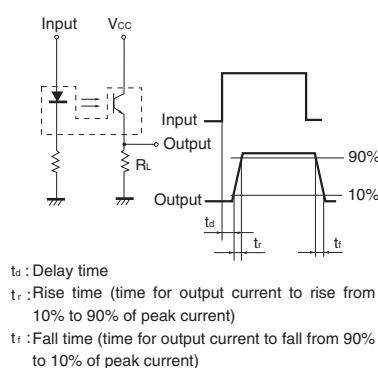


Fig.11 Response time measurement circuit

Notes

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