## Photointerrupter, Ultraminiature SMD 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	Po	80	mW
Output (photo- transistor)	Collector-emitter voltage	Vceo	30	V
	Emitter-collector voltage	Veco	4.5	V
	Collector current	Ic	30	mA
	Collector power dissipation	Pc	80	mW
Operating temperature		Topr	-30 to +85	°C
	Storage temperature	Tstg	-40 to +85	°C

# Applications

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

#### Features

#### Electrical and optical characteristics (Ta=25°C)

Parameter			Symbol	Min.	Тур.	Max.	Unit	Conditions
Input charao- teristics	Forward voltage		VF	-	1.8	2.3	V	Ir=50mA
	Reverse current		IR	-	-	10	μА	V <sub>R</sub> =5V
Output charac- teristics	Dark current		Iceo	-	-	0.1	μА	Vce=10V
	Peak sensitivity wavelength		λь	-	800	-	nm	-
Transfer characteristics	Collector current		Ic	0.1	-	-	mA	VcE=5V, IF=5mA
	Collector-emitter saturation voltage		VCE(sat)	-	-	0.4	V	Ir=20mA, Ic=0.1mA
	Response time	Rise time	tr	-	30	150	μs	Vcc=5V, Ir=0.1mA, Rι=1000Ω
		Fall time	tf	-	30	150	μs	
Infrared light emitter diode	Peak light emitting wavelength		λρ	-	850	-	nm	Ir=50mA  * Non-coherent Infrared light emitting diode used.
Photo transistor	Response time		tr•tf	-	50	-	μs	$\label{eq:cc=5V} V_{cc=5V,\ lc=0.1mA,\ R\iota=1000\Omega}$ * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength		λь	-	800	-	nm	-

#### Electrical and optical characteristics curves

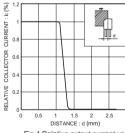


Fig.4 Relative output current vs. distance (II)

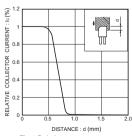


Fig.1 Relative output current vs. distance (I)

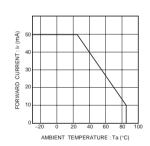


Fig.2 Forward current falloff

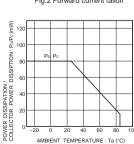


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

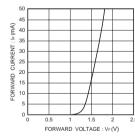


Fig.3 Forward current vs. forward

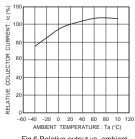
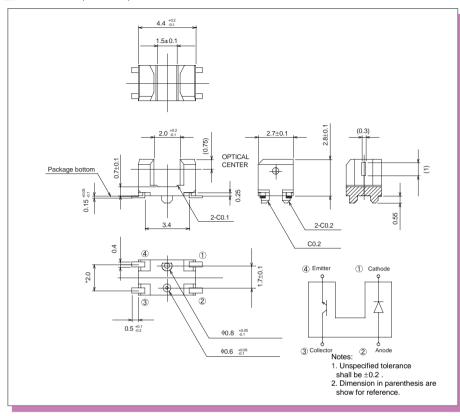
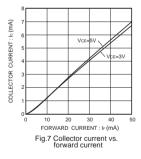


Fig.6 Relative output vs. ambient

#### Dimensions (Unit : mm)





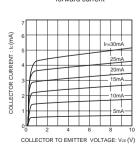


Fig.10 Output characteristics

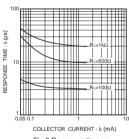


Fig.8 Response time vs.

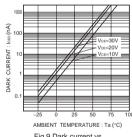
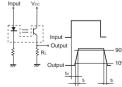


Fig.9 Dark current vs.



- td: Delay time
- tr: Rise time (time for output current to rise from 10% to 90% of peak current)
- tr : Fall time (time for output current to fall from 90% to 10% of peak current)

Fig.11 Response time measurement circuit

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