

●Applications

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

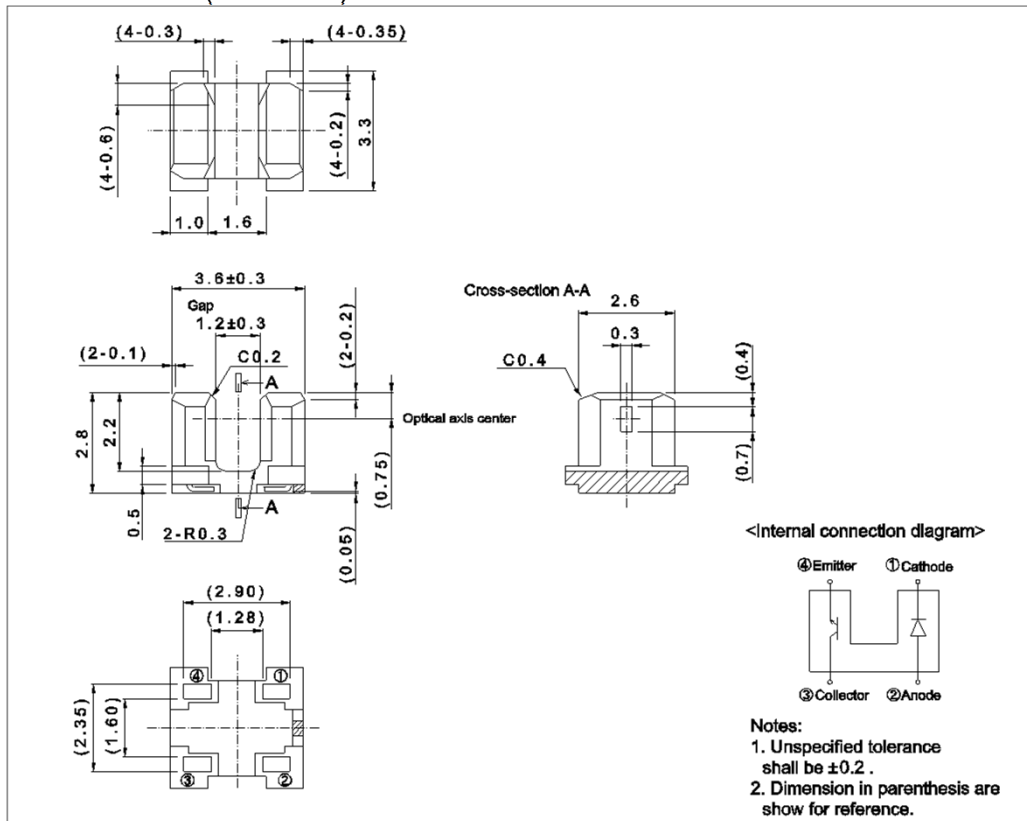
●Features

- 1) Ultra-small.
- 2) Gap 1.2mm.

●Outline



●Dimensions (Unit : mm)



●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Value	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_{CEO}	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 +85	°C

●Electrical and optical characteristics (T_a = 25°C)

Parameter		Symbol	Conditions	Values			Unit	
				Min.	Typ.	Max.		
Input characteristics	Forward voltage	V _F	I _F = 50mA	-	1.3	1.6	V	
	Reverse current	I _R	V _R = 5V	-	-	10	μA	
Output characteristics	Dark current	I _{CEO}	V _{CE} = 10V	-	-	0.5	μA	
	Peak sensitivity wavelength	λ _p	-	-	800	-	nm	
Transfer characteristics	Collector current	I _C	V _{CE} = 5V, I _F = 20mA	0.45	-	4.95	mA	
	Collector-emitter saturation voltage	V _{CE(sat)}	I _F = 20mA, I _C = 0.1mA	-	-	0.4	V	
	Response time	Rise time	t _r	V _{CC} = 5V, I _F = 20mA, R _L = 100Ω	-	10	-	μs
		Fall time	t _f		-	10	-	μs
Collector rank	A	I _C	V _{CE} = 5V, I _F = 20mA	0.45	-	2.33	mA	
	B			0.95	-	4.95		
Infrared light emitter diode	Cut-off frequency	f _C	I _F = 50mA	-	1	-	MHz	
	Peak light emitting wavelength	λ _p	* Non-coherent Infrared light emitting diode used.	-	950	-	nm	
Photo transistor	Response time	t _r ·t _f	V _{CC} = 5V, I _C = 1mA, R _L = 100Ω *This product is not designed to be protected against electromagnetic wave.	-	10	-	μs	
	Maximum sensitivity wavelength	λ _p	-	-	800	-	nm	

●Electrical and optical characteristics curves

Fig.1 Relative Output Current vs.Distance (I)

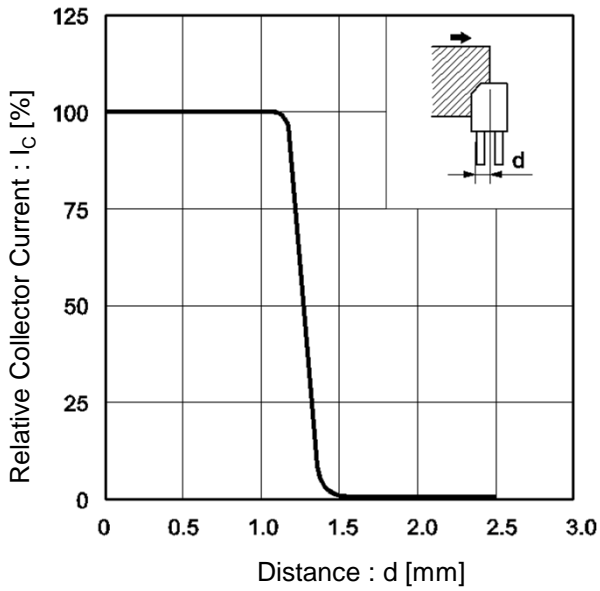


Fig.2 Relative Output Current vs.Distance (II)

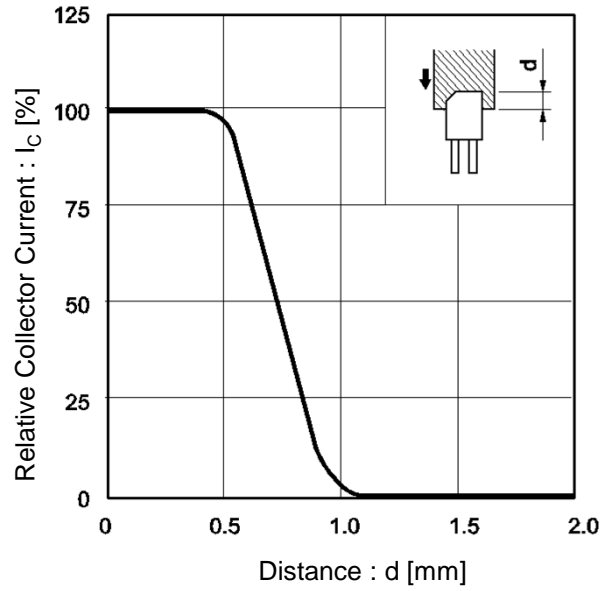


Fig.3 Forward Current Falloff

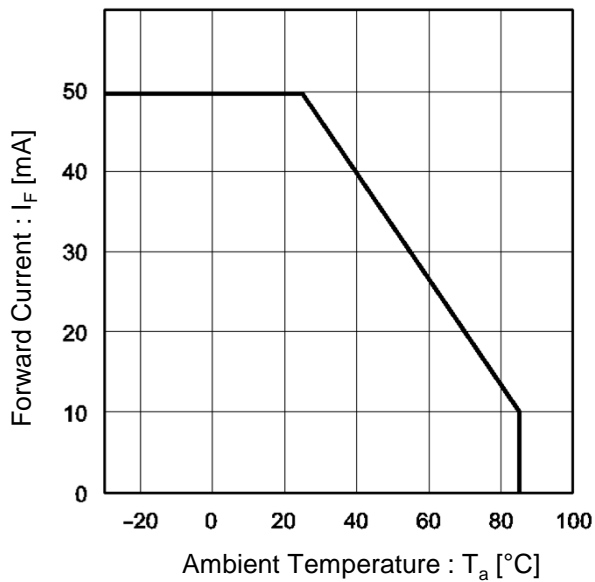
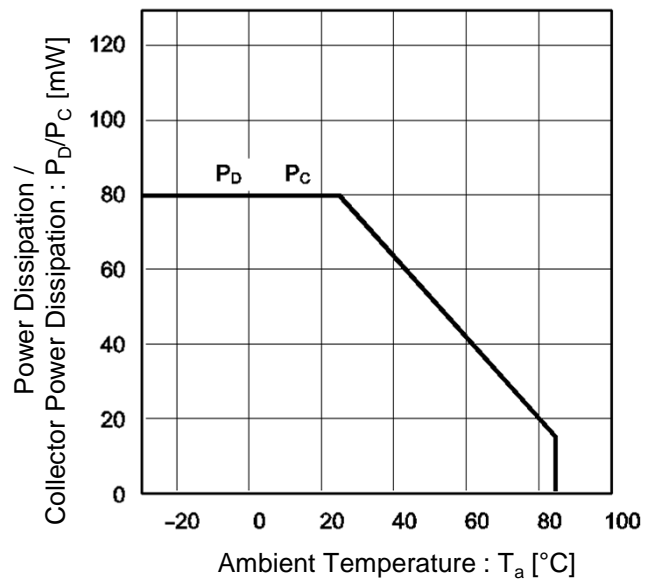


Fig.4 Power Dissipation / Collector Power Dissipation vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Forward Current vs. Forward Voltage

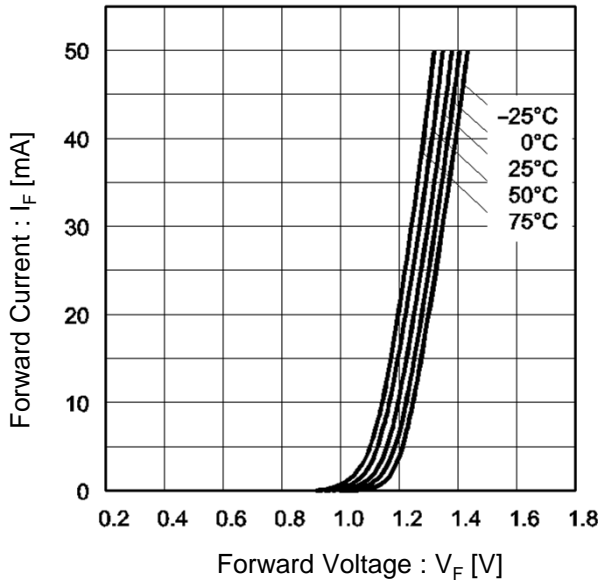


Fig.6 Collector Current vs. Forward Current

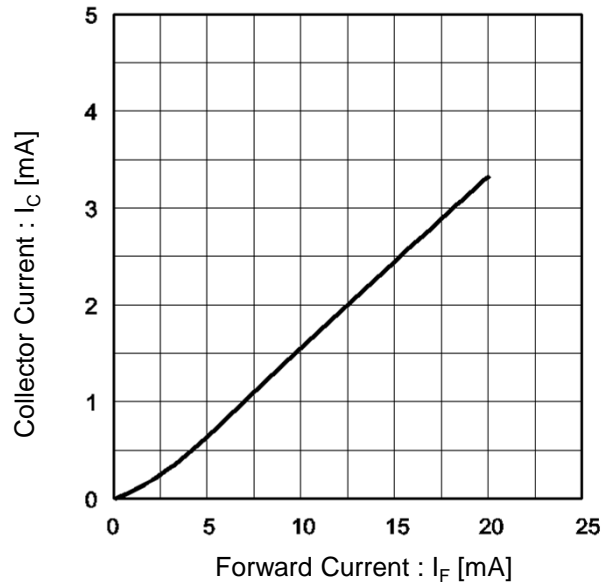


Fig.7 Relative Output vs. Ambient Temperature

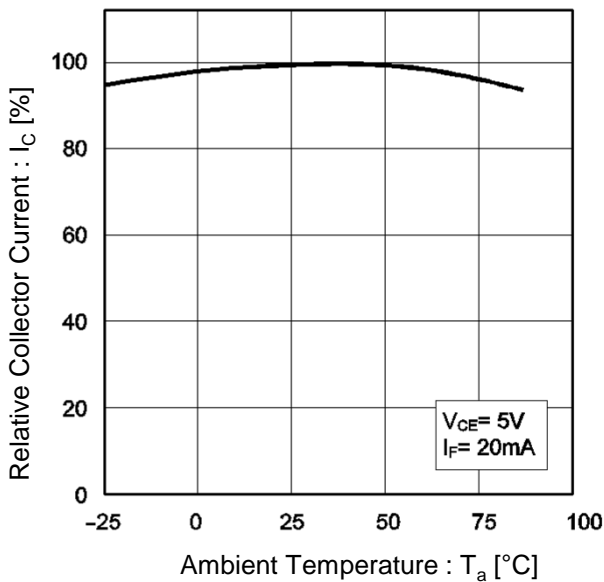
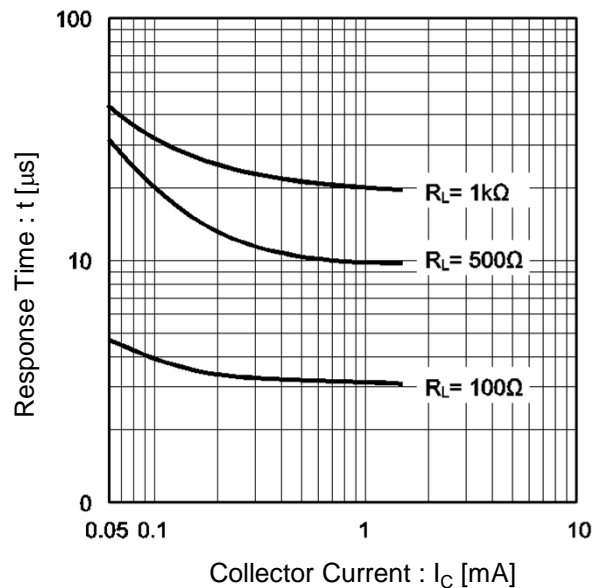


Fig.8 Response Time vs. Collector Current



●Electrical and optical characteristics curves

Fig.9 Dark Current vs. Ambient Temperature

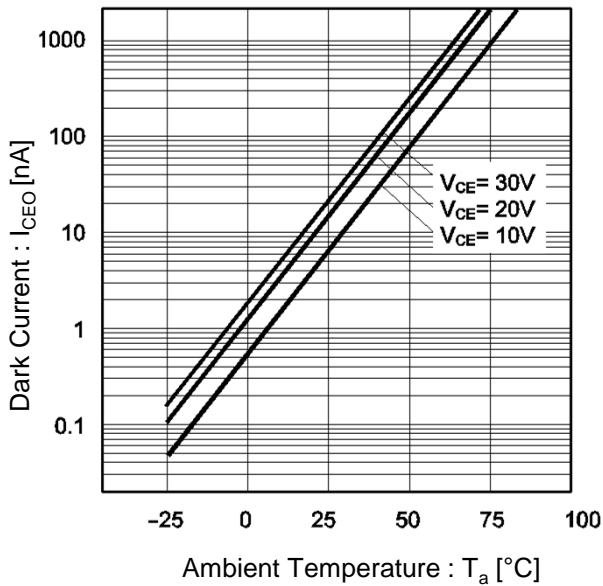


Fig.10 Output Characteristics

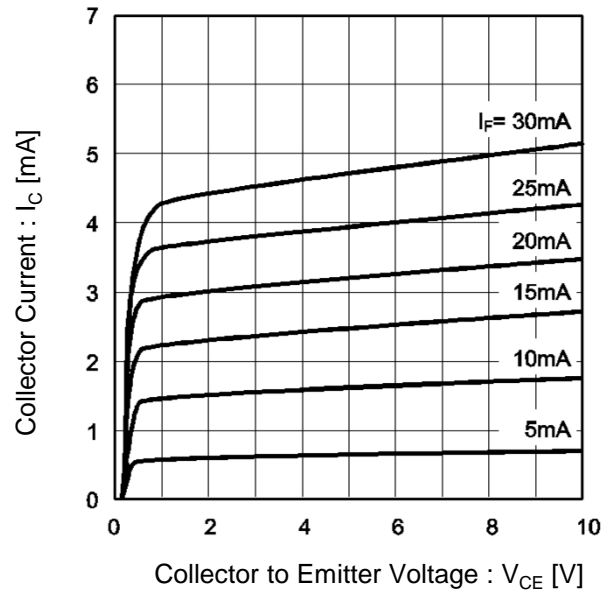
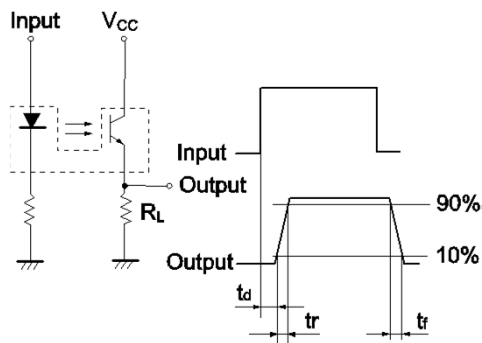


Fig.11 Response Time Measurement Circuit



t_d : Delay time
 t_r : Rise time (time for output current to rise from 10% to 90% of peak current)
 t_f : Fall time (time for output current to fall from 90% to 10% of peak current)

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