

●Applications

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

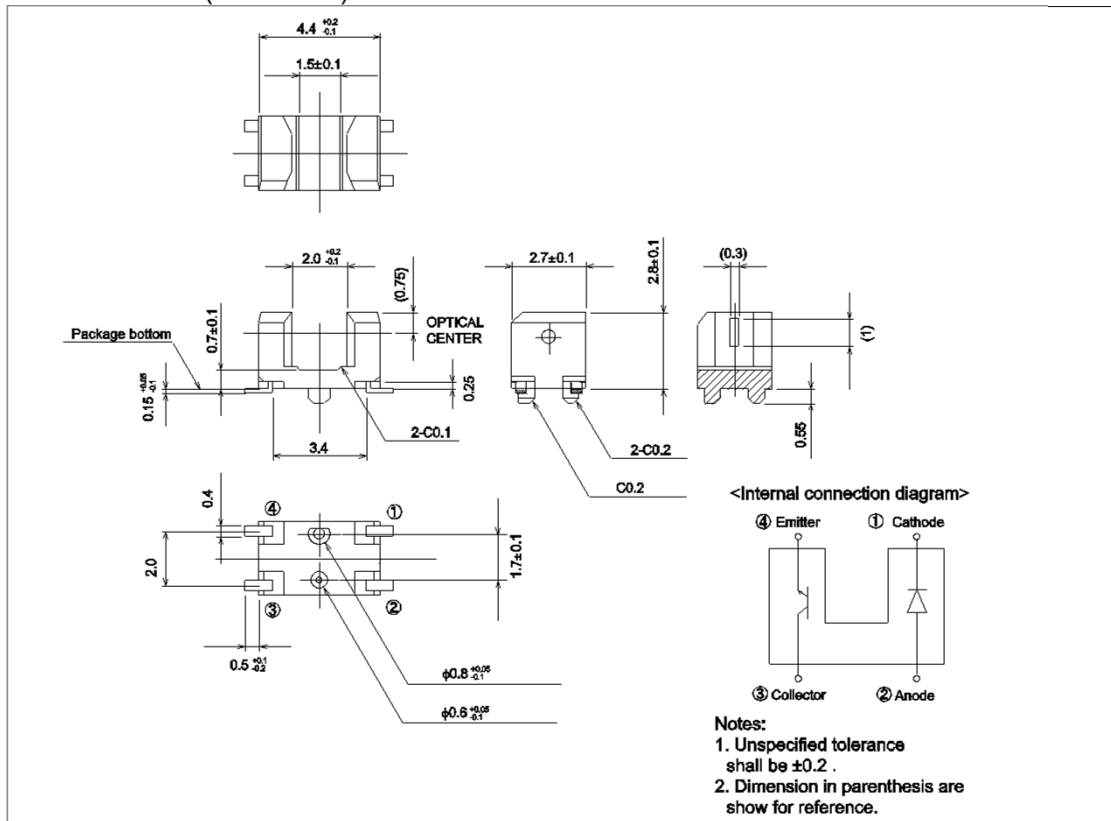
●Features

- 1) Ultraminiature middle size SMD type.
- 2) Gap 2.0mm.

●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}	-30 to +85	$^\circ\text{C}$
Storage temperature		T_{stg}	-40 to +85	$^\circ\text{C}$

●Electrical and optical characteristics ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Conditions	Values			Unit	
				Min.	Typ.	Max.		
Input characteristics	Forward voltage	V_F	$I_F = 50\text{mA}$	-	1.8	2.3	V	
	Reverse current	I_R	$V_R = 5\text{V}$	-	-	10	μA	
Output characteristics	Dark current	I_{CEO}	$V_{CE} = 10\text{V}$	-	-	0.1	μA	
	Peak sensitivity wavelength	λ_p	-	-	800	-	nm	
Transfer characteristics	Collector current	I_C	$V_{CE} = 5\text{V}, I_F = 5\text{mA}$	0.1	-	-	mA	
	Collector-emitter saturation voltage	$V_{CE(\text{sat})}$	$I_F = 20\text{mA}, I_C = 0.1\text{mA}$	-	-	0.4	V	
	Response time	Rise time	t_r	$V_{CC} = 5\text{V}, I_F = 0.1\text{mA}, R_L = 1000\Omega$	-	50	150	μs
		Fall time	t_f		-	50	150	μs
Infrared light emitter diode	Peak light emitting wavelength	λ_p	$I_F = 50\text{mA}$ * Non-coherent Infrared light emitting diode used.	-	850	-	nm	
Photo transistor	Response time	$t_r \cdot t_f$	$V_{CC} = 5\text{V}, I_C = 1\text{mA}, R_L = 1000\Omega$ *This product is not designed to be protected against electromagnetic wave.	-	50	-	μs	
	Maximum sensitivity wavelength	λ_p	-	-	800	-	nm	

●Electrical and optical characteristics curves

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

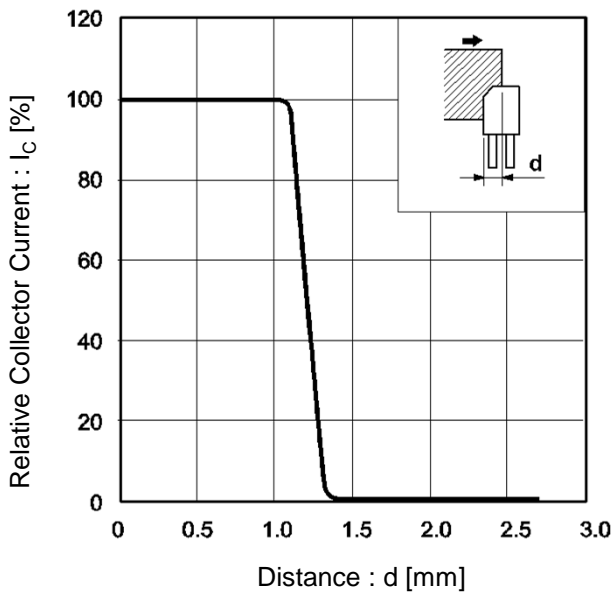


Fig.2 Relative Output Current vs.Distance (II)

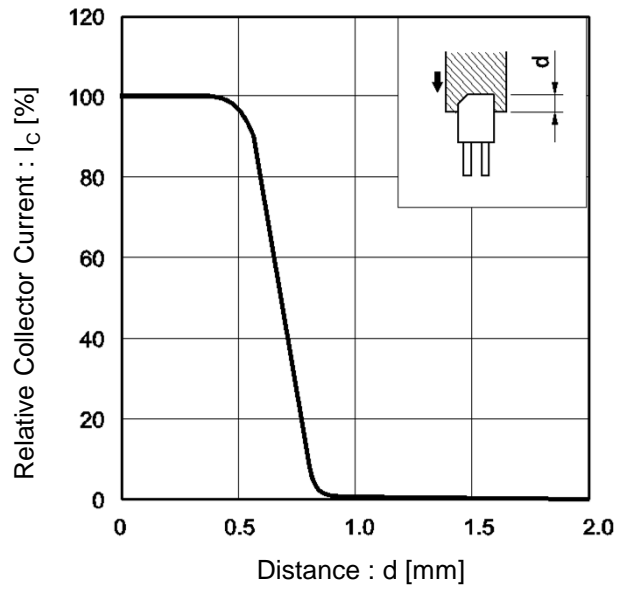


Fig.3 Forward Current Falloff

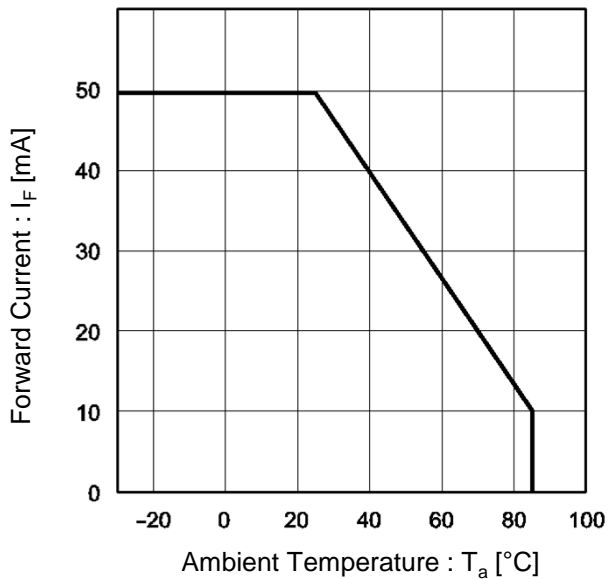
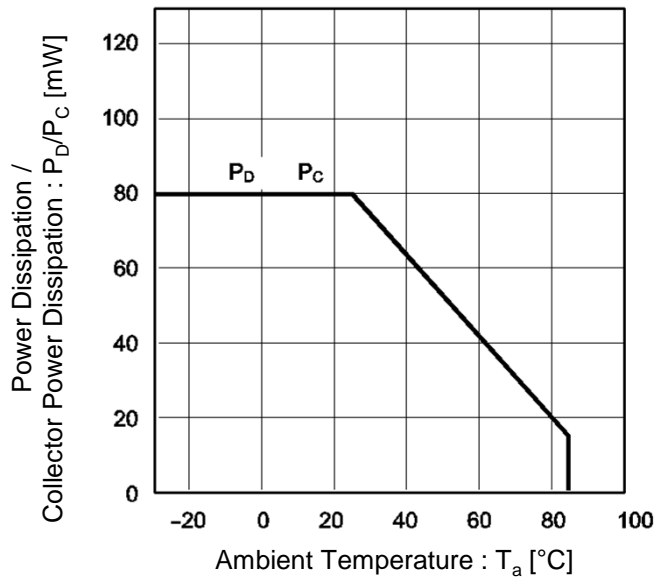


Fig.4 Power Dissipation / Collector Power Dissipation vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Forward Current vs. Forward Voltage

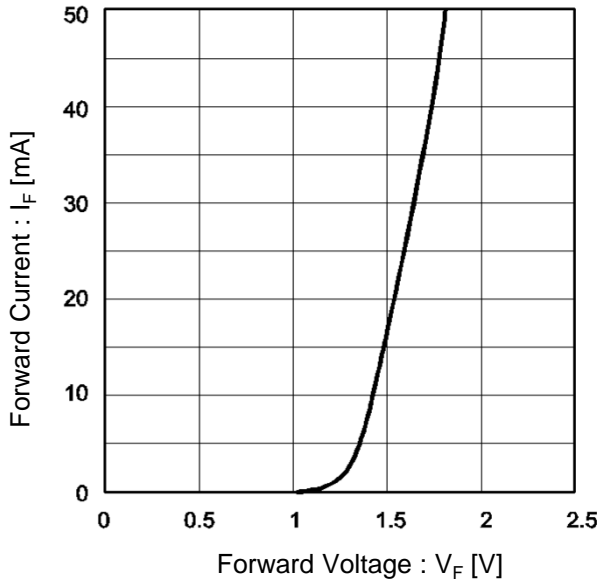


Fig.6 Collector Current vs. Forward Current

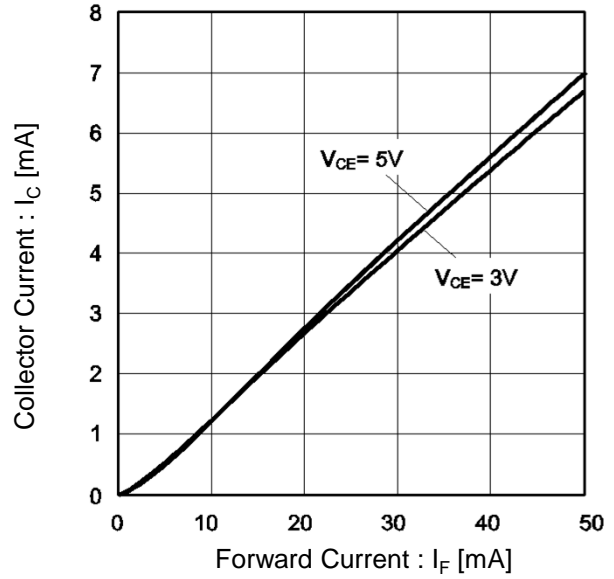


Fig.7 Relative Output vs. Ambient Temperature

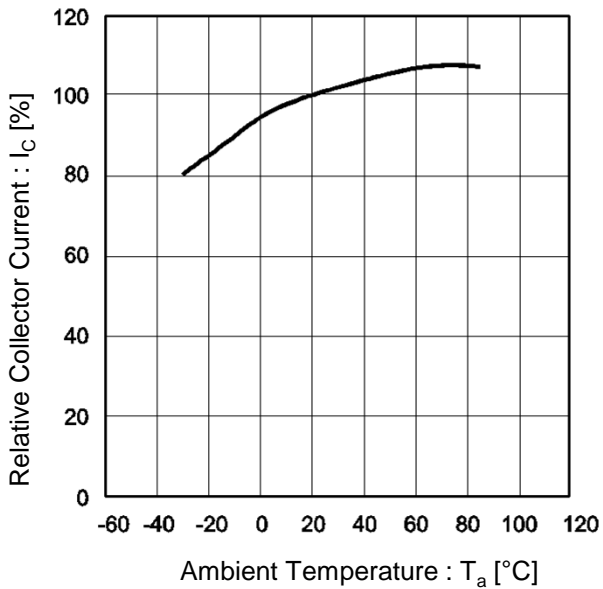
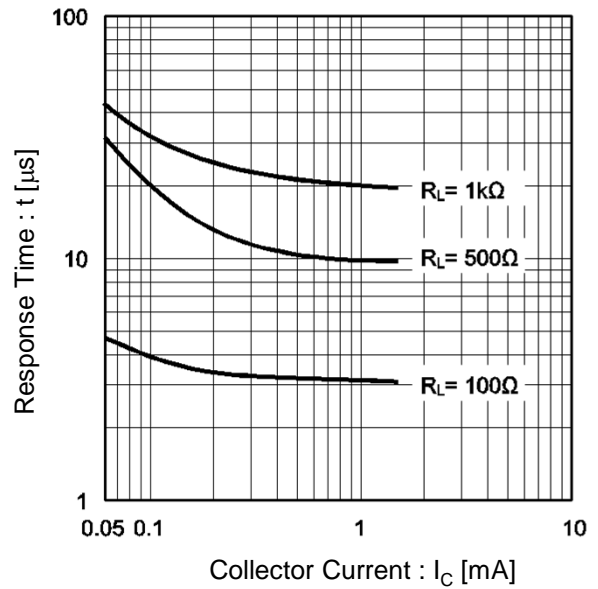


Fig.8 Response Time vs. Collector Current



●Electrical and optical characteristics curves

Fig.9 Dark Current vs. Ambient Temperature

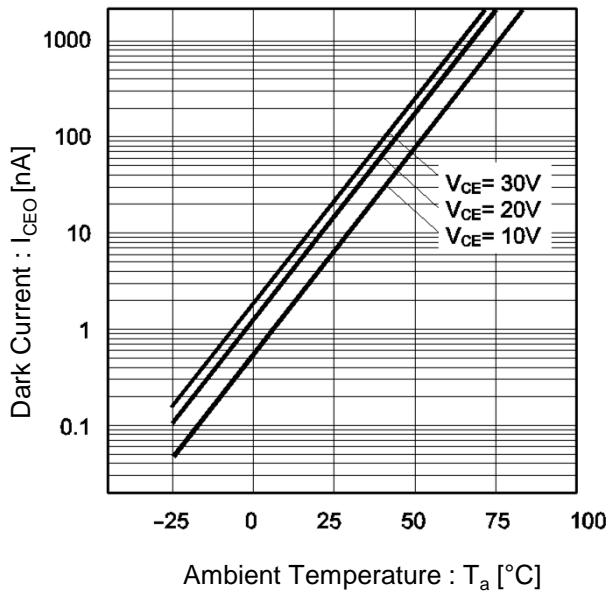


Fig.10 Output Characteristics

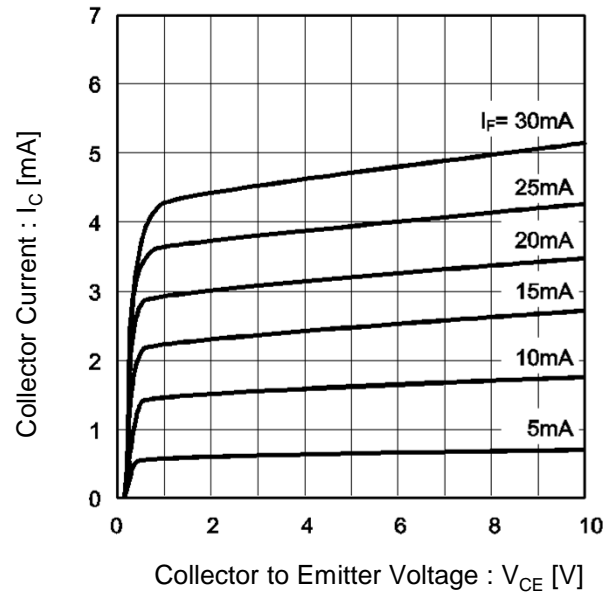


Fig.11 Response Time Measurement Circuit



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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