

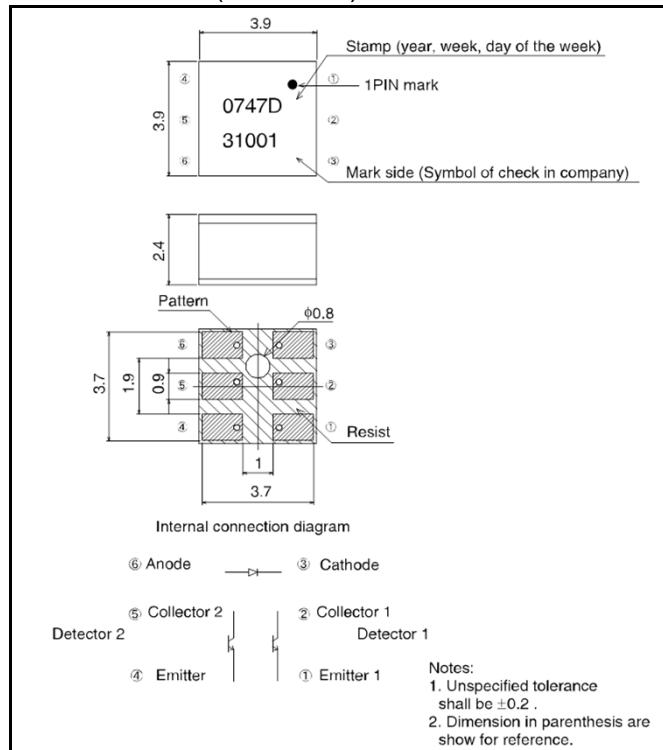
● Applications

- DSC(Digital still camera)
- DVC(Digital video camera)
- Smart phone
- Fan heater
- Projector

● Features

- 1) Surface Mount type
- 2) Optical Sensor
- 3) 4 Direction Detector

● Dimensions (Unit : mm)



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

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_{ECO}	4.5 V
	Collector current	I_C	30 mA
	Collector 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 (Ta = 25°C)

1) Input characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Forward voltage	V _F	I _F =50mA	-	1.3	1.6	V
Reverse current	I _R	V _R =5V	-	-	10	μA

2) Output characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Dark current	I _{CED}	V _{CE} =10V	-	-	0.5	μA
Peak sensitivity wavelength	λ _p	-	-	800	-	nm

3) Transfer characteristics

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector current	I _C	V _{CE} =5V, I _F =5mA	100	-	-	μA
DC leakage current	I _{leak}	V _{CE} =5V, I _F =5mA	-	-	15	
Collector-emitter saturation voltage	V _{CE(sat)}	I _F =20mA, I _C =0.1mA	-	-	0.4	V
Response time	Rise time	tr	V _{CC} =5V, I _F =20mA R _L =100Ω	-	10	-
	Fall time	tf		-	10	-

4) Infrared light emitter diode

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Cut-off frequency	f _C	I _F =50mA ^{*1}	-	1	-	MHz
Peak light emitting wavelength	λ _P		-	950	-	nm

*1 Non-coherent Infrared light emitting diode used.

5) Phototransistor

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Response time	tr-tf	V _{CC} =5V, I _C =1mA, R _L =100Ω ^{*2}	-	10	-	μs
Maximum sensitivity wavelength	λ _P	-	-	800	-	nm

*2 This product is not designed to be protected against electromagnetic wave.

●Electrical and optical characteristic curves

Fig.1 Forward Current A Falloff

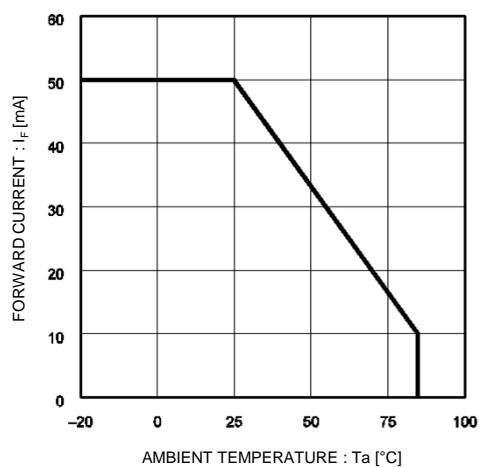


Fig.2 Forward Current vs. Forward Voltage

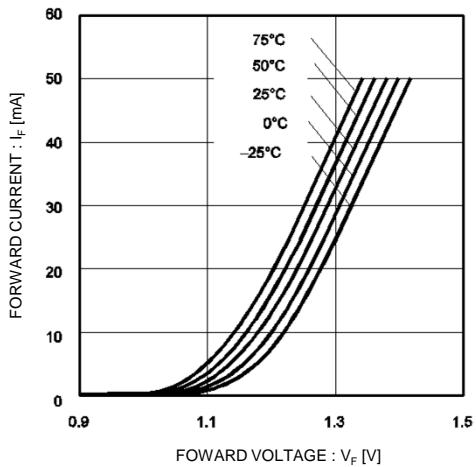


Fig.3 Power Dissipation / Collector Power Dissipation vs. Ambient Temperature

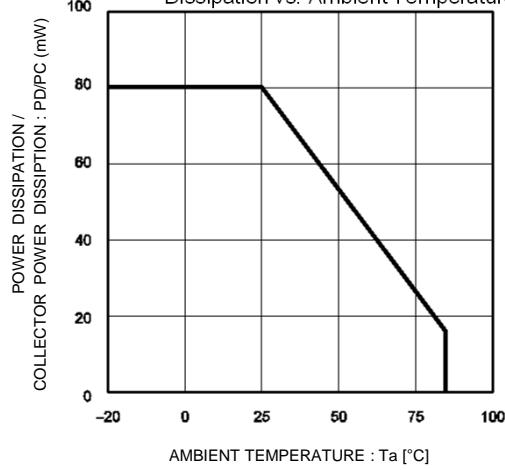


Fig.4 Relative Output vs. Ambient Temperature

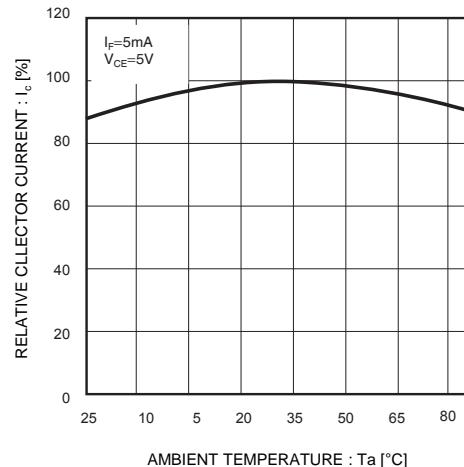


Fig.5 Collector Current vs. Forward Current

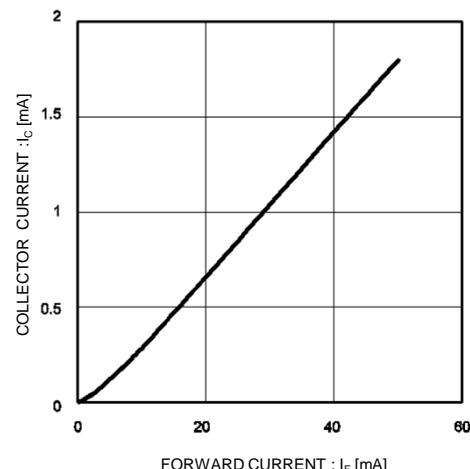
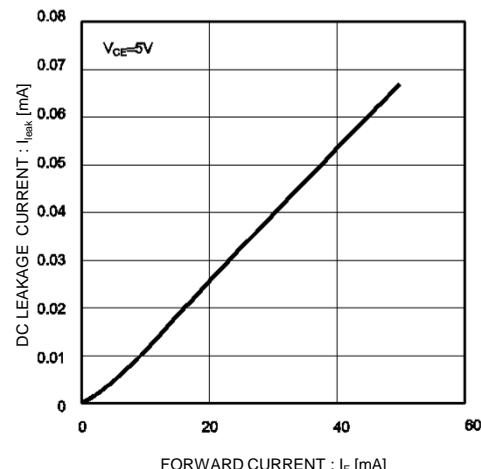


Fig.6 DC Leakage Current vs. Forward Current



●Electrical and optical characteristic curves

Fig.7 Response Time vs. Collector Current

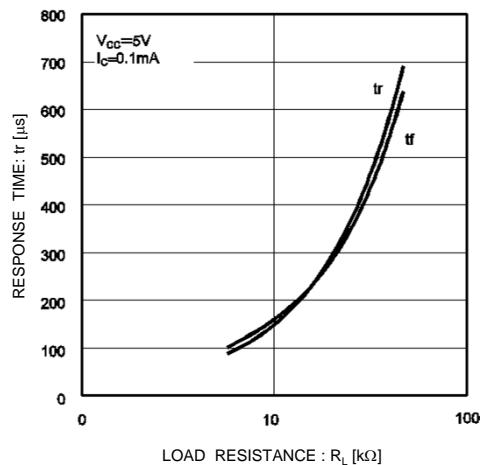


Fig.8 Dark Current vs. Ambient Temperature

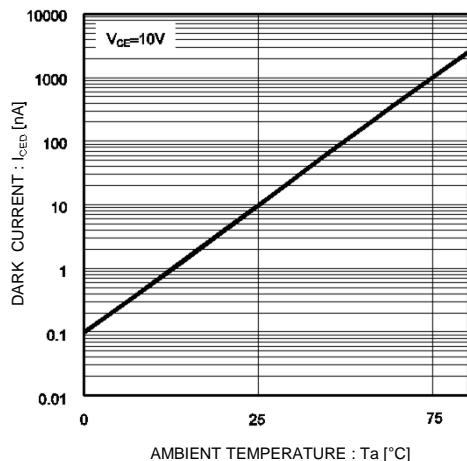


Fig.9 Output Characteristics

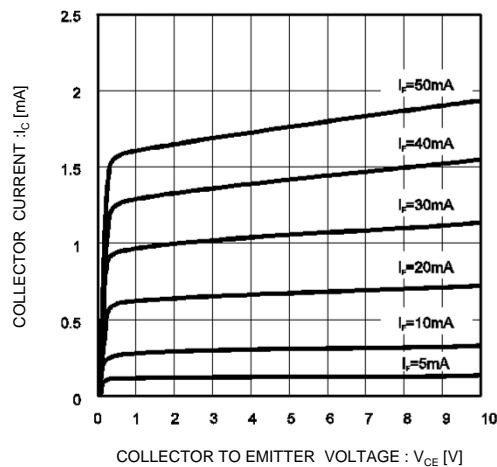
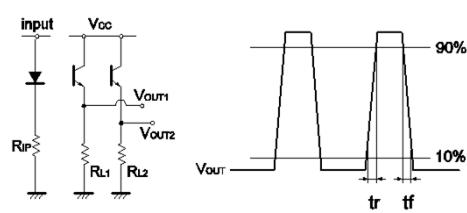


Fig.10 Response Time Measurement Circuit



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