

Surface Mount type 4 Direction Detector



Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Input (LED)	Forward current	50	mA
	Reverse voltage	5	V
	Power dissipation	80	mW
Output (photo-transistor)	Collector-emitter voltage	30	V
	Emitter-collector voltage	4.5	V
	Collector current	30	mA
	Collector power dissipation	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, Fan herater,
 Projector

Features

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

Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input charac-teristics	Forward voltage	V _F	-	1.3	V	I _F =50mA
	Reverse current	I _R	-	10	µA	V _R =5V
Output charac-teristics	Dark current	I _{CEO}	-	0.5	µA	V _{CE} =10V
	Peak sensitivity wavelength	λ _P	-	800	nm	-
Transfer characteristics	Collector current	I _C	100	-	µA	V _{CE} =5V, I _F =5mA
	DC leakage current	I _{leak}	-	15	µA	V _{CE} =5V, I _F =5mA
	Collector-emitter saturation voltage	V _{CE(sat)}	-	0.4	V	I _F =20mA, I _C =0.1mA
	Response time	Rise time	t _r	-	10	µs
Fall time		t _f	-	10	µs	
Infrared light emitter 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	t _r · t _f	-	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

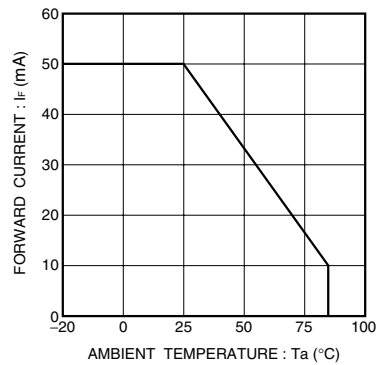


Fig.1 Forward current falloff

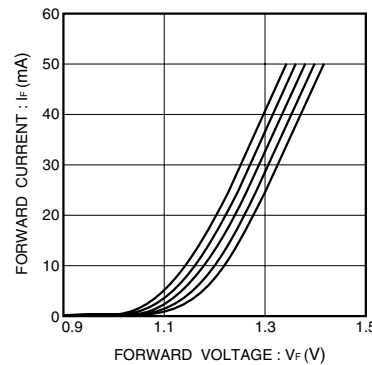


Fig.2 Forward current vs. forward voltage

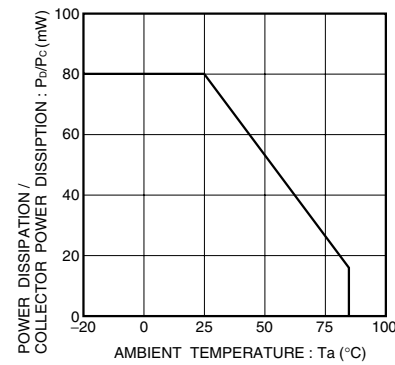


Fig.3 Power dissipation / collector power dissipation vs. ambient temperature

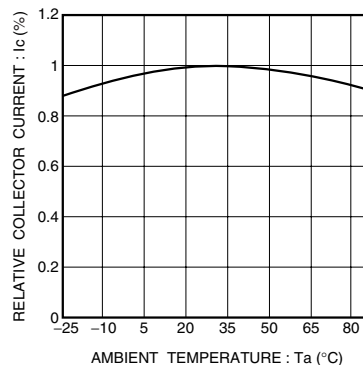


Fig.4 Relative output vs. ambient temperature

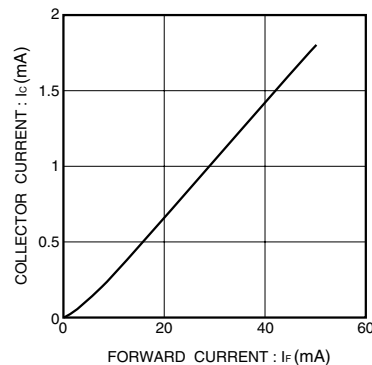


Fig.5 Collector current vs. forward current

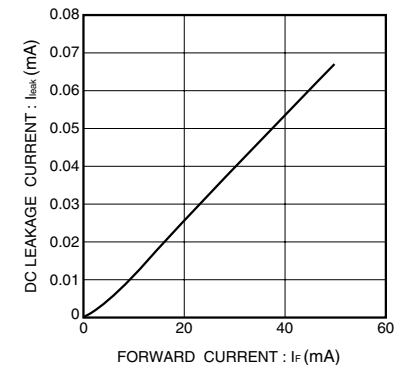


Fig.6 DC leakage current vs. forward current

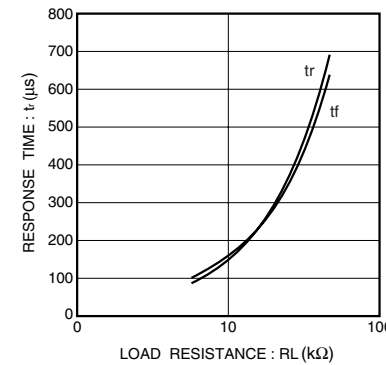


Fig.7 Response time vs. collector current

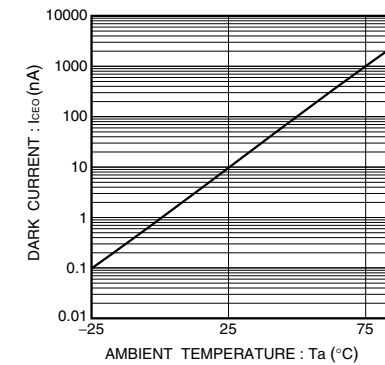


Fig.8 Dark current vs. ambient temperature

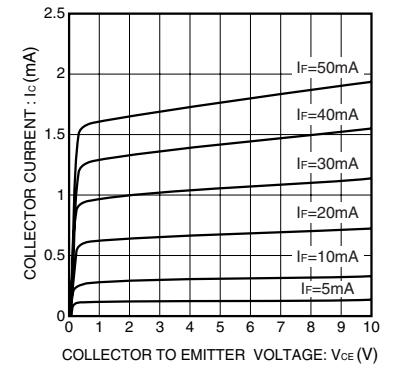


Fig.9 Output characteristics

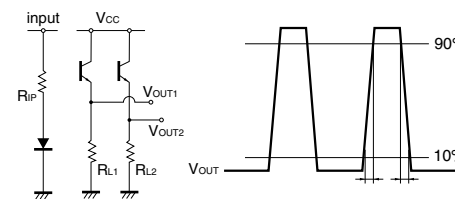
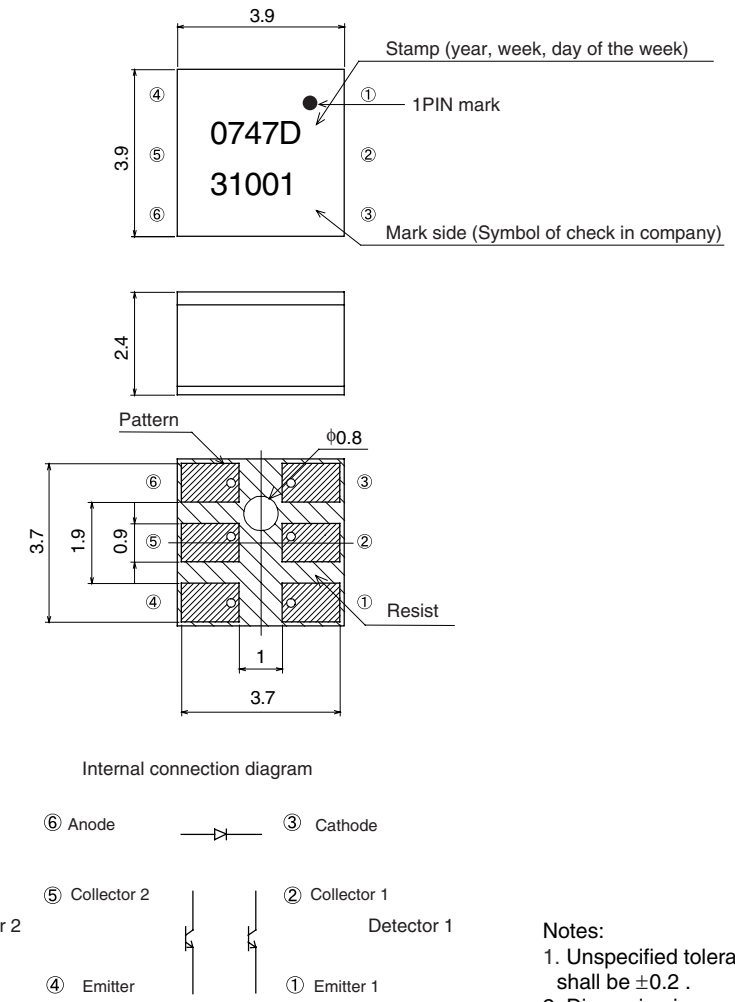


Fig.10 Response time measurement circuit

Dimensions (Unit : mm)



- Notes:
- 1. Unspecified tolerance shall be ±0.2 .
 - 2. Dimension in parenthesis are show for reference.

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