

## Thin type / Surface Mount type 4 Direction Detector



### Absolute maximum ratings (Ta=25°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 (photo-transistor)	Collector-emitter voltage	$V_{CE0}$	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

### 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
- 4) Noise less type

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

	Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input characteristics	Forward voltage	$V_F$	-	1.1	1.3	V	$I_F=5mA$
	Reverse current	$I_R$	-	-	10	$\mu A$	$V_R=10V$
Output characteristics	Dark current	$I_{CEO}$	-	-	0.5	$\mu A$	$V_{CE}=10V$
Transfer characteristics	Collector current	$I_C$	50	80	-	$\mu A$	$V_{CE}=5V, I_F=5mA$
	DC leakage current	$I_{leak}$	-	10	20	$\mu A$	$V_{CE}=5V, I_F=5mA$
	Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_F=5mA, I_C=0.05mA$
	Response time	Rise time	$t_r$	-	10	-	$\mu s$
Fall time		$t_f$	-	10	-	$\mu s$	
Infrared light emitter diode	Peak light emitting wavelength	$\lambda_P$	-	950	-	nm	$I_F=50mA$ * Non-coherent Infrared light emitting diode used.
Photo transistor	Maximum sensitivity wavelength	$\lambda_P$	-	800	-	nm	-

### Electrical and optical characteristics curves

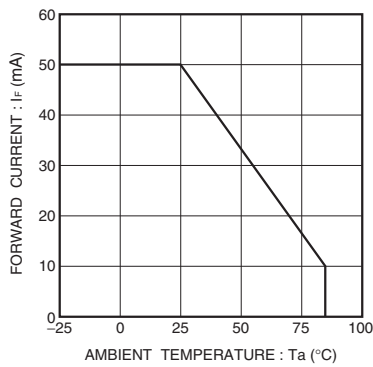


Fig.1 Forward current falloff

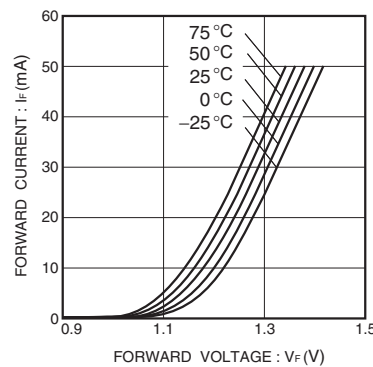


Fig.2 Forward current vs. forward voltage

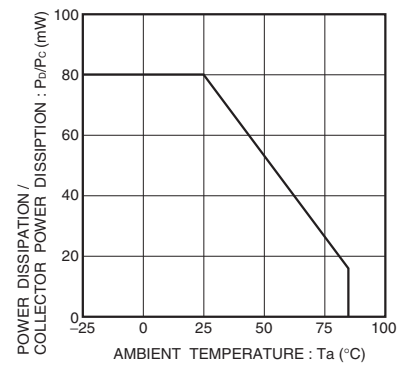


Fig.3 Power dissipation / collector power dissipation vs. ambient temperature

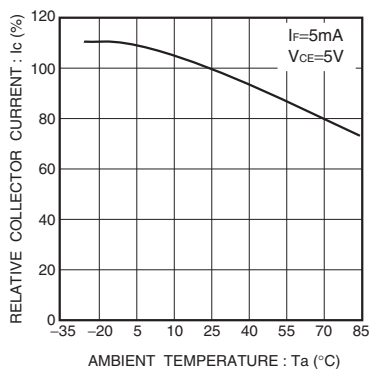


Fig.4 Relative output vs. ambient temperature

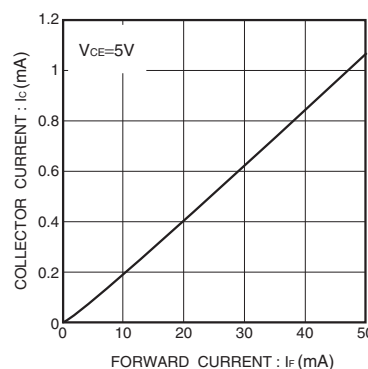


Fig.5 Collector current vs. forward current

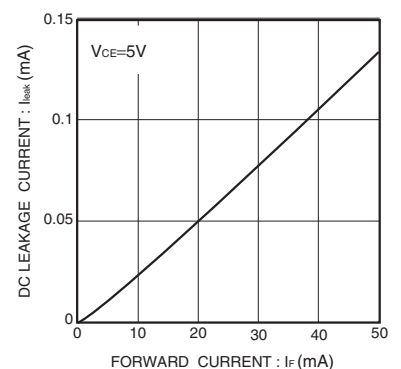
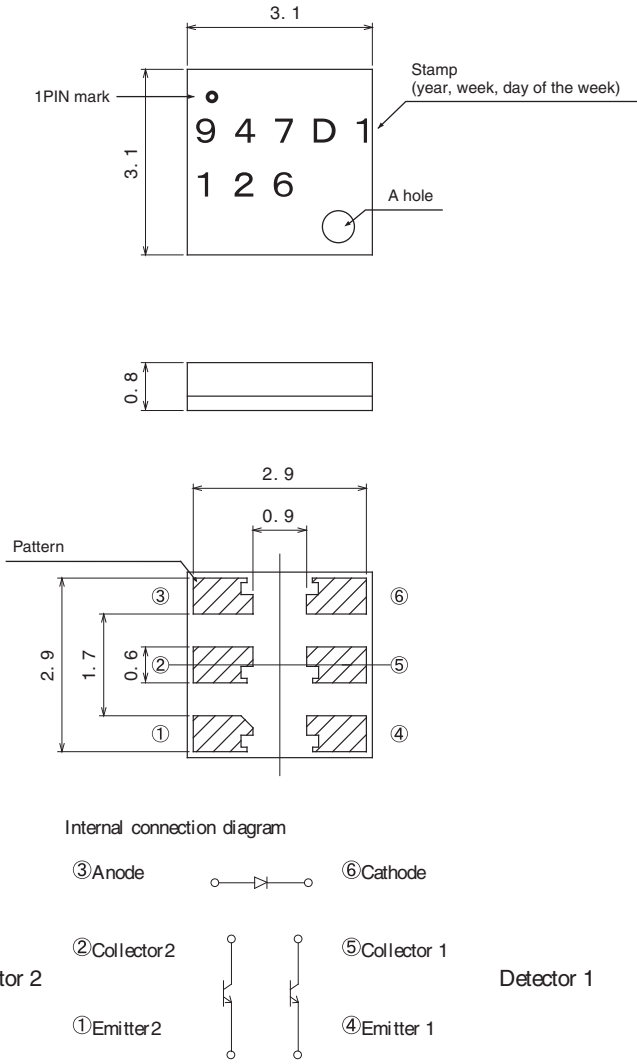


Fig.6 DC leakage current vs. forward current



Notes:  
Unspecified tolerance shall be  $\pm 0.2$ .

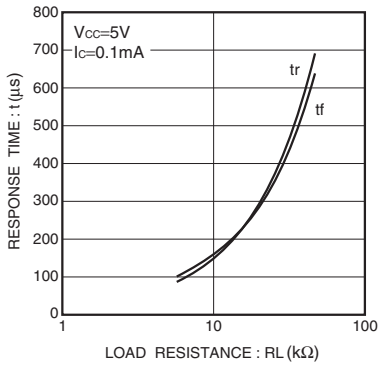


Fig.7 Response time vs. load resistance

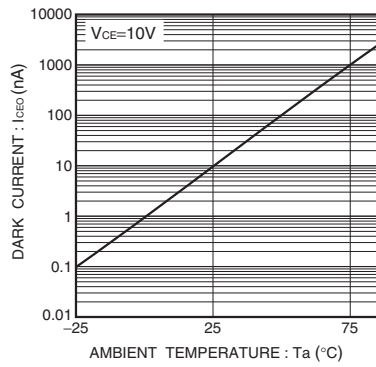


Fig.8 Dark current vs. ambient temperature

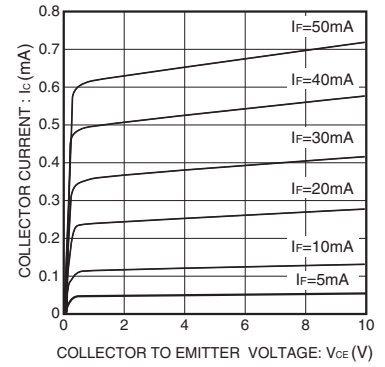


Fig.9 Output characteristics

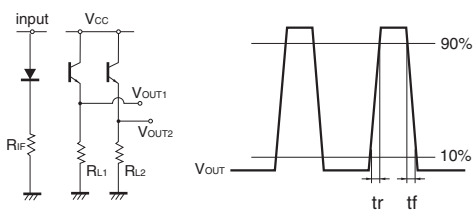


Fig.10 Response time measurement circuit

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