



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_{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

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 charac-teristics	Forward voltage	V_F	—	1.1	1.3	V	$I_F=5mA$
	Reverse current	I_R	—	—	10	μA	$V_R=10V$
Output charac-teristics	Dark current	I_{CEO}	—	—	0.5	μA	$V_{CE}=10V$
Transfer characteristics	Collector current	I_C	50	80	—	μA	$V_{CE}=5V, I_F=5mA$
	DC leakage current	I_{leak}	—	10	20	μA	$V_{CE}=5V, I_F=5mA$
	Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	$I_F=5mA, I_C=0.05mA$
	Response time	Rise time Fall time	t_r t_f	10 10	— —	μs μs	$V_{CC}=5V, I_C=0.05mA, R_L=100\Omega$
Infrared light emitter diode	Peak light emitting wavelength	λ_P	—	950	—	nm	$I_F=50mA$ * Non-coherent Infrared light emitting diode used.
Photo transistor	Maximum sensitivity wavelength	λ_P	—	800	—	nm	—

Electrical and optical characteristics curves

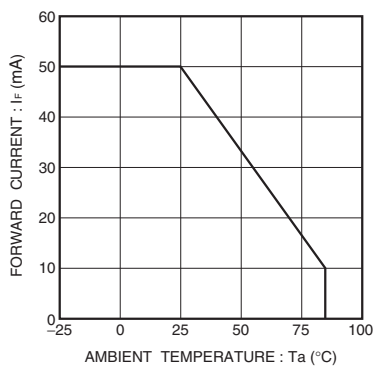


Fig.1 Forward current falloff

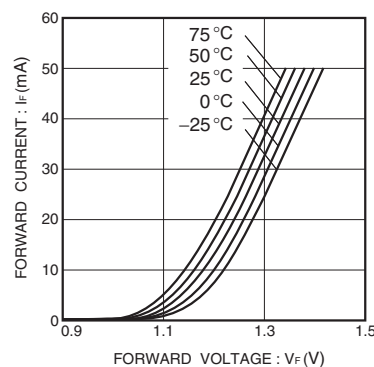


Fig.2 Forward current vs. forward voltage

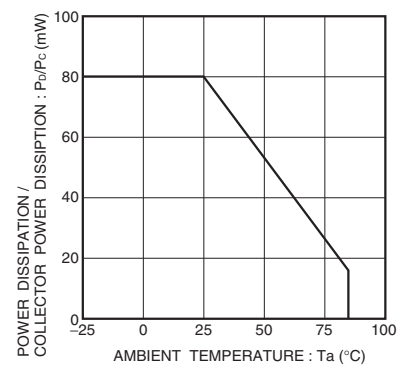


Fig.3 Power dissipation / collector power dissipation vs. ambient temperature

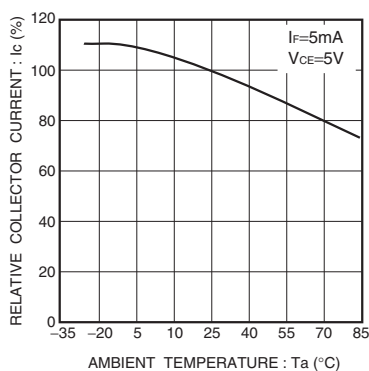


Fig.4 Relative output vs. ambient temperature

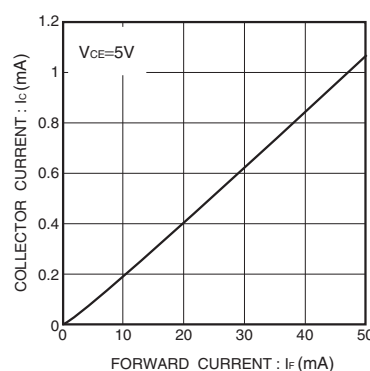


Fig.5 Collector current vs. forward current

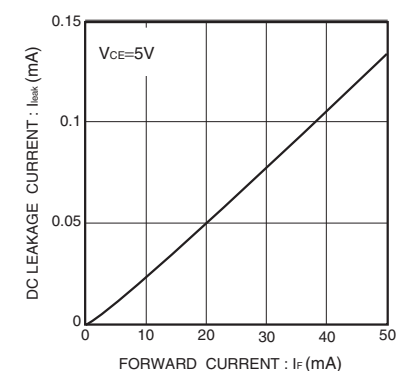
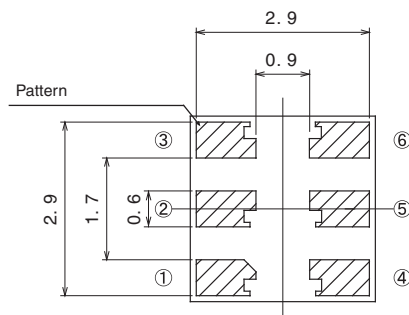
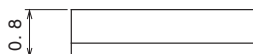
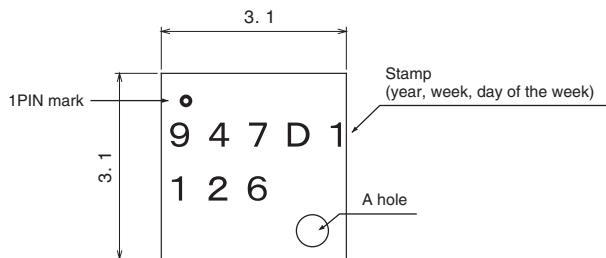
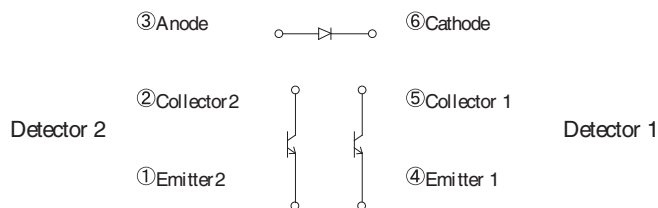


Fig.6 DC leakage current vs. forward current



Internal connection diagram



Notes:
Unspecified tolerance
shall be ± 0.2 .

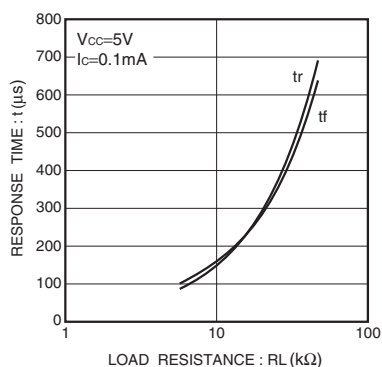


Fig.7 Response time vs. load resistance

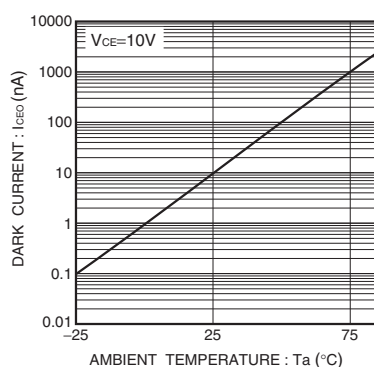


Fig.8 Dark current vs. ambient temperature

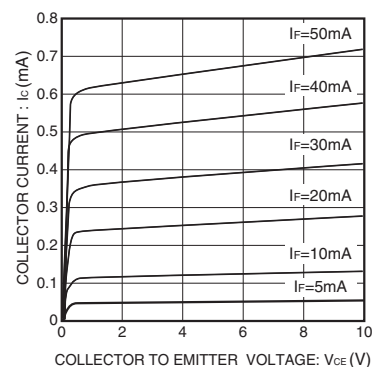


Fig.9 Output characteristics

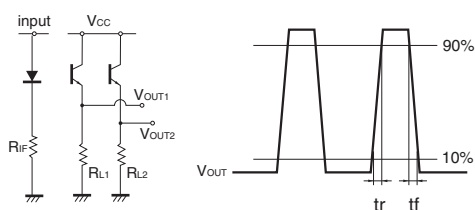


Fig.10 Response time measurement circuit

Notes

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