4-Direction Detector Surface Mount type

RPI-1050 Datasheet

●Applications

• DSCs

• DVCs

• Projectors

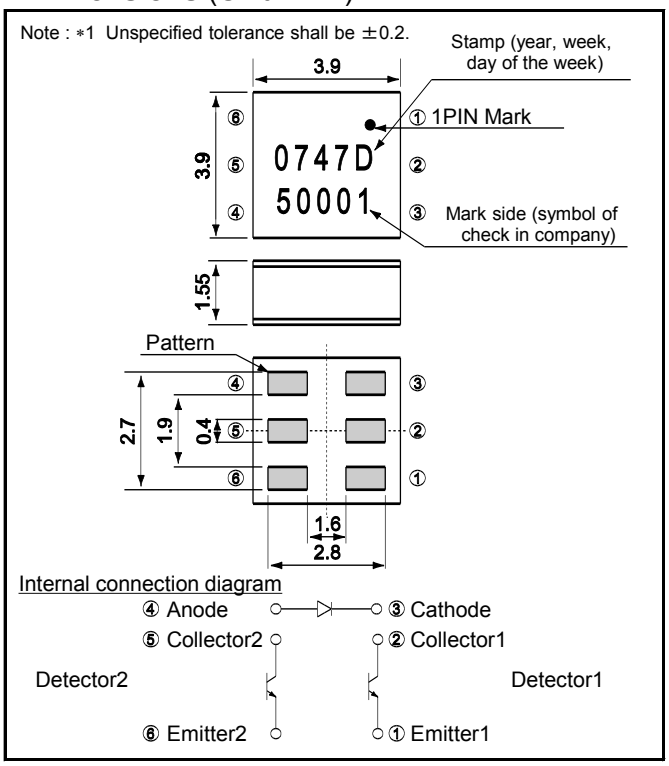
●Features

1) Surface mount

2) Optical

3) 4-way detection possible

●Dimensions (Unit : mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Value	Unit
Input (Infrared light emitting diode)	Forward current	I_F	35	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 =5mA	-	1.35	1.6	V
Reverse current	I_R	V_R =5V	-	-	10	μA
Peak light emitting wavelength	λ_p	I_F =5mA	-	850	-	nm

∗ Non-coherent Infrared light emitting diode used.

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	150	-	-	μA
Leak current		I_{leak}	V_{CE} =5V I_F =5mA	-	-	12	
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	-	μs
	Fall time	tf		-	10	-	

●Electrical and optical characteristic curves

Fig.1 Collector Current vs. Foward Current

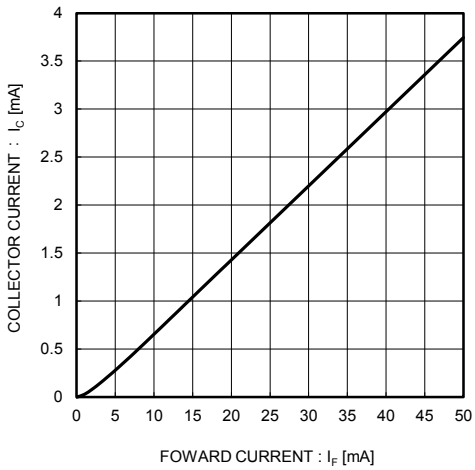


Fig.2 Dark Current vs. Foward Current

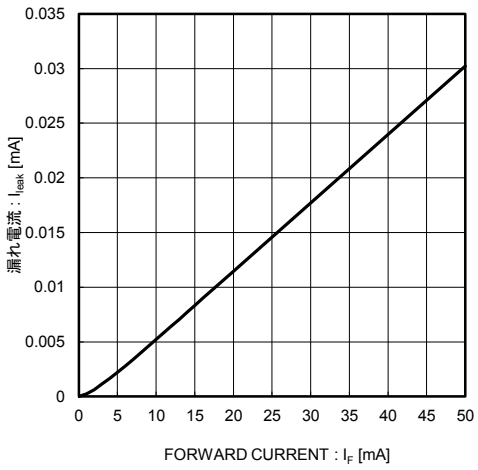


Fig.3 Forward Current vs. Foward Voltage

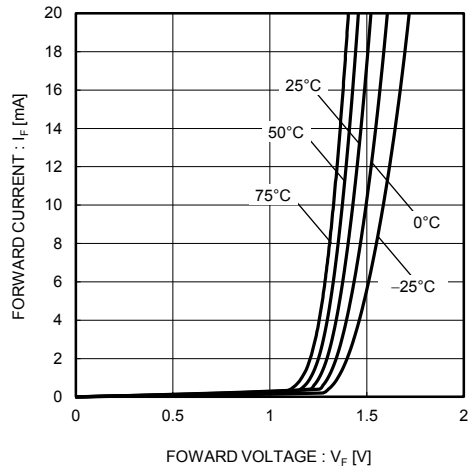


Fig.4 Relative Output vs. Ambient Temperature

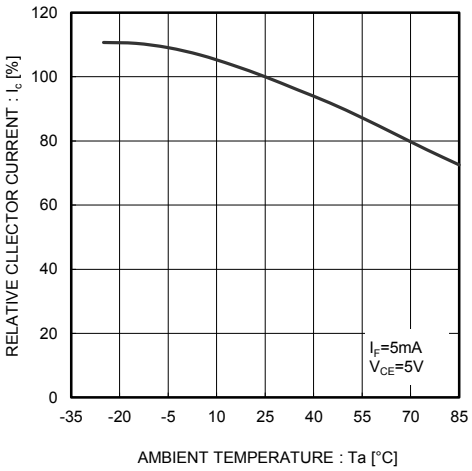


Fig.5 Forward Current Fall Off

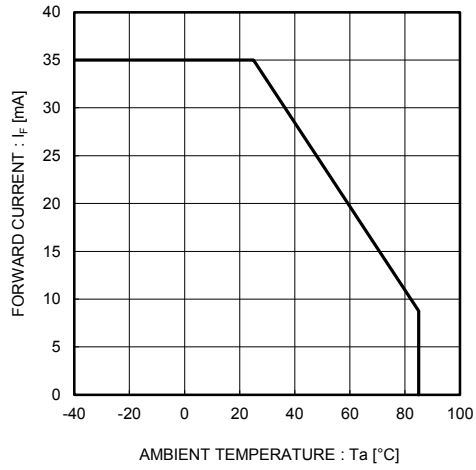
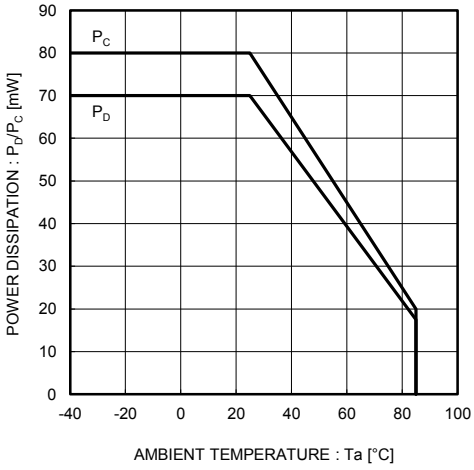


Fig.6 Power Dissipation/Collector Power Dissipation vs. Ambient Temperature



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