Phototransistor, top view type

RPT-37PB3F Datasheet

The RPT-37PB3F is a silicon planar phototransistor. Since it is molded in plastic with a visible light filter, there is almost no effect from stray light. It is particularly suited for use with a ROHM SIR-34ST3F infrared light emitting diode. It is possible to distinguish the polarity by the shape of ramp type.

●Applications

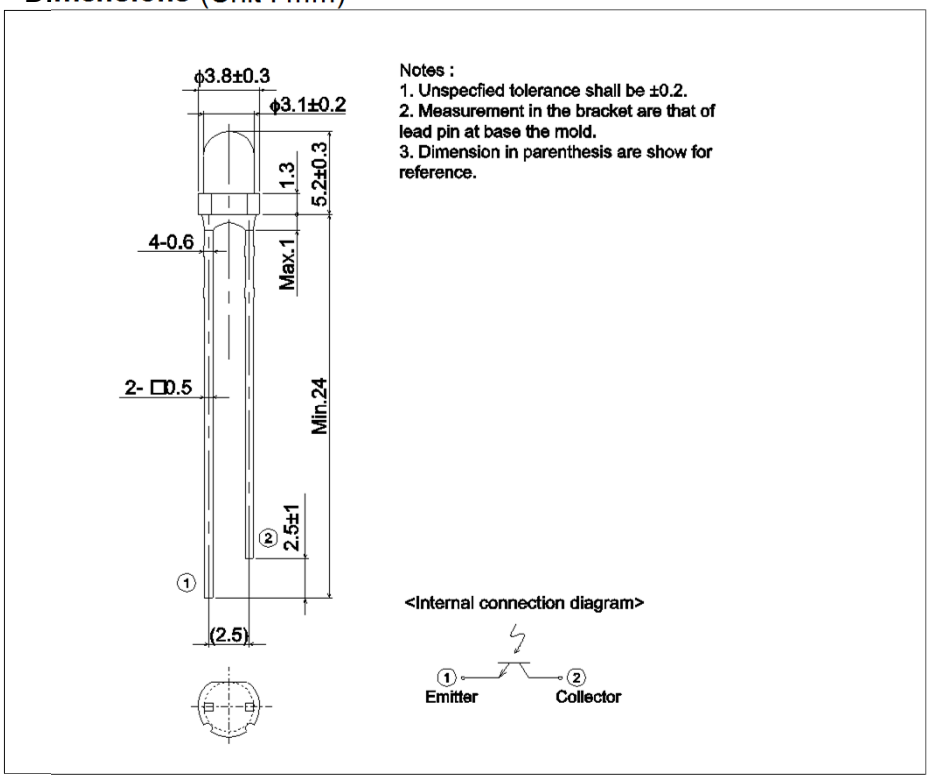
- Optical control equipment
- Receiver for sensors

●Outline

●Features

1) High sensitivity.
2) Almost no effect from stray light.

●Dimensions (Unit : mm)



●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	32	V
Emitter-collector voltage	V_{ECO}	5	V
Collector current	I_C	30	mA
Collector power dissipation	P_C	150	mW
Operating temperature	T_{opr}	−25 to +85	°C
Storage temperature	T_{stg}	−30 to +85	°C

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●Electrical and optical characteristics (T_a = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Light current	I_C	V_{CE} =5V, E=500Lx	2.0	-	-	mA
Dark current	I_{CEO}	V_{CE}=10V (Black box)	-	-	0.5	μA
Peak sensitivity wavelength	λ_p	-	-	800	-	nm
Collector-emitter saturationvoltage	$V_{CE(sat)}$	I_C =1mA, E=500Lx	-	-	0.4	V
Half-angle	$\theta_{1/2}$	-	-	±36	-	deg
Response time	tr·tf	V_{CC} =5V, I_C=1mA, R_L=100Ω	-	10	-	μs

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●Electrical and optical characteristics curves

Fig.1 Dark Current vs. Ambient Temperature

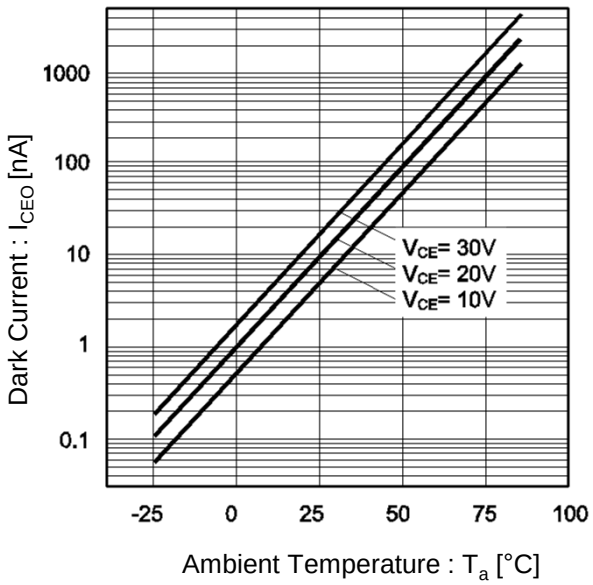


Fig.2 Relative Output vs. Ambient Temperature

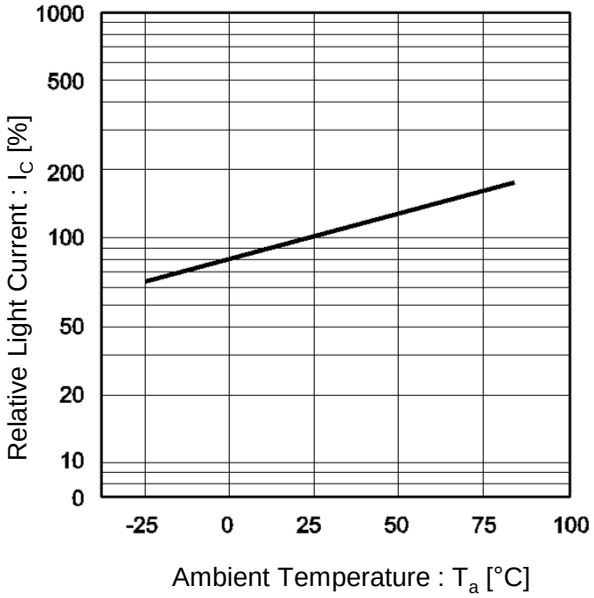


Fig.3 Light Current vs. Emitter Strength

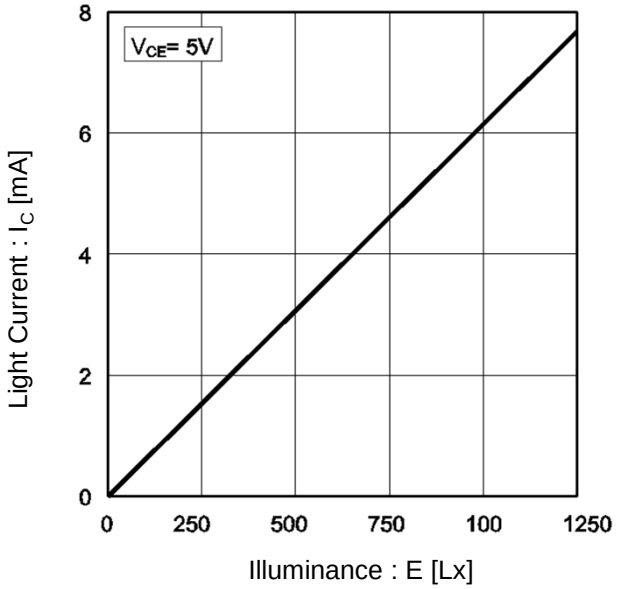
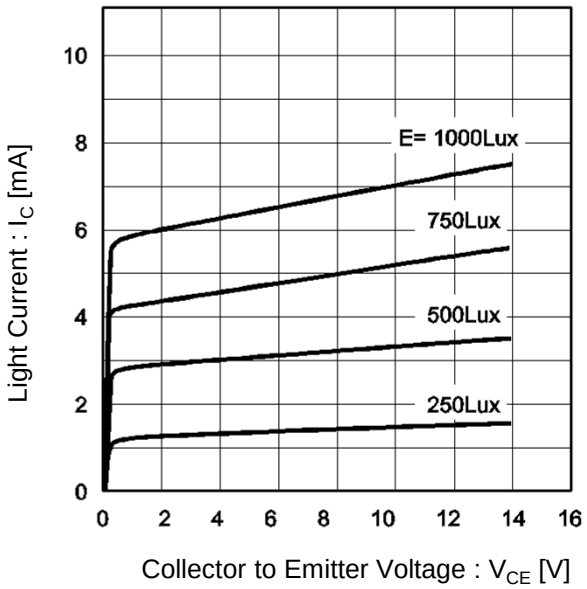


Fig.4 Output Characteristics



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●Electrical and optical characteristics curves

Fig.5 Spectral Sensitivity

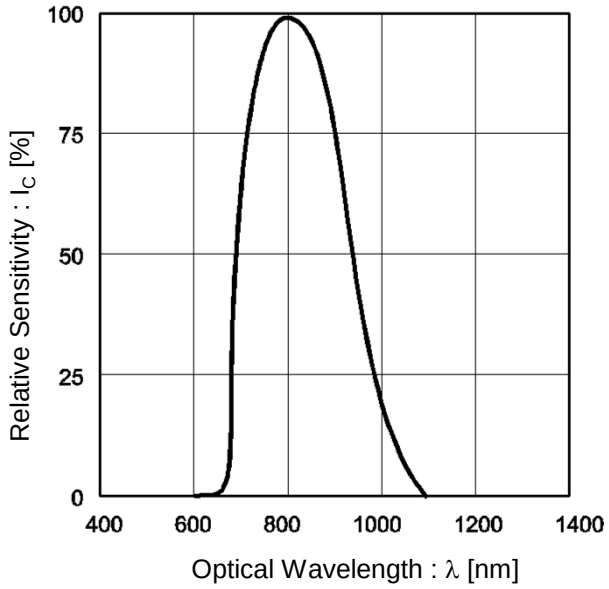


Fig.6 Collector Power Dissipation vs. Ambient Temperature

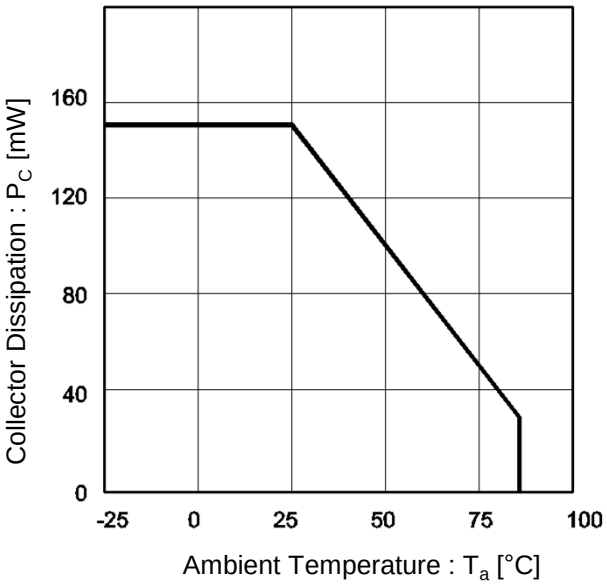
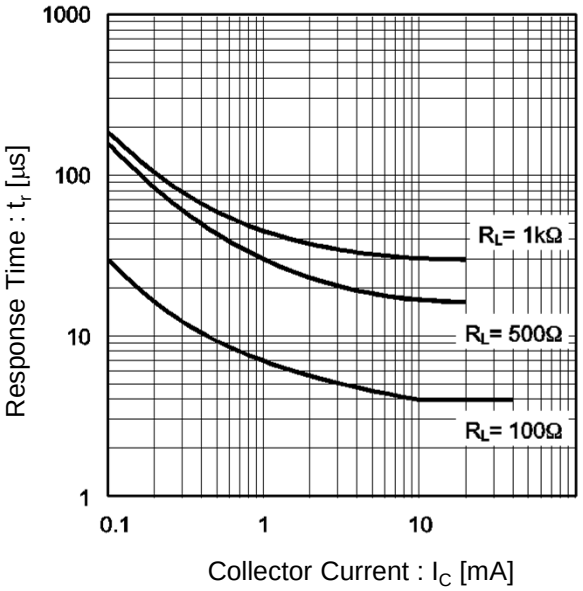


Fig.7 Response time vs.Collector Current



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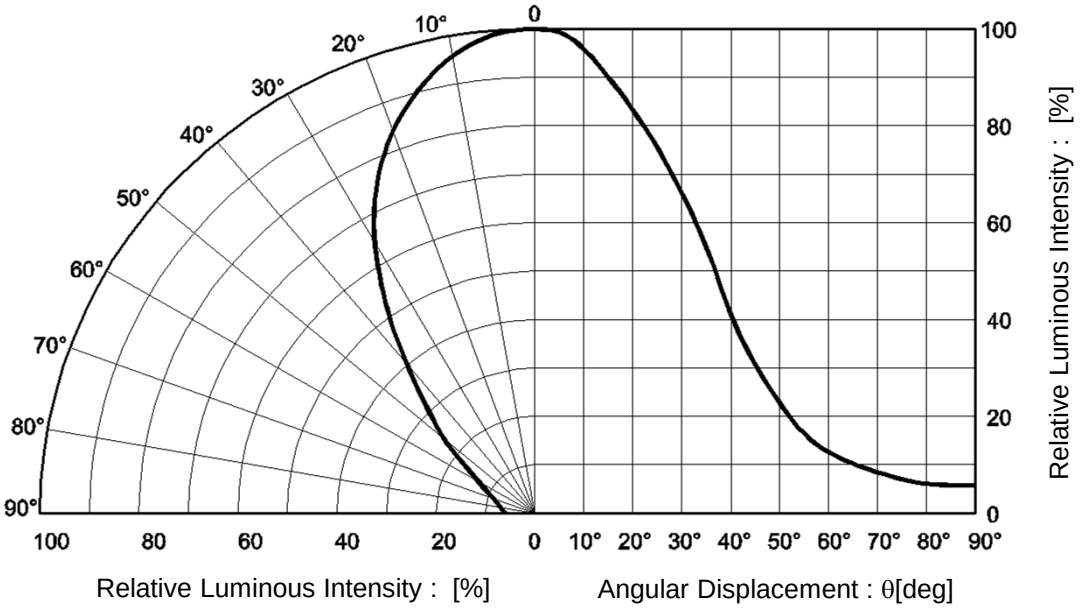
●Electrical and optical characteristics curves

Fig.8 Directional Pattern



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Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9