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

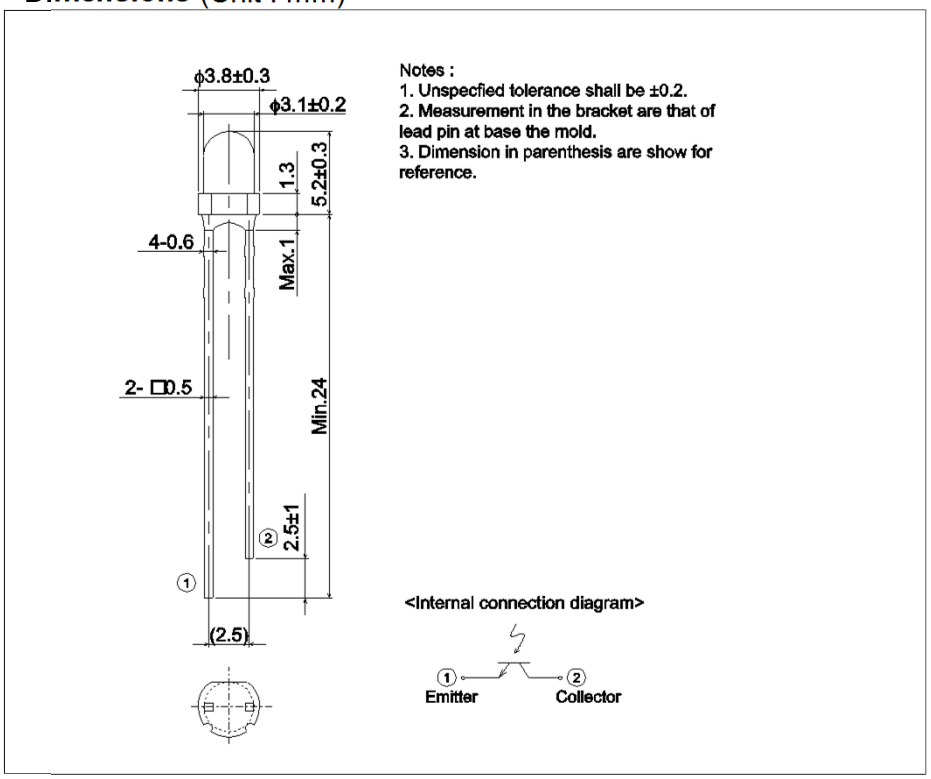
- Optical control equipment
- Receiver for sensors

●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

●**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

●**Classified table of rank**

Item	Light current : I_C			Unit
L	2.0	to	5.0	mA
M	3.0	to	8.0	mA
N	5.5	to	13.0	mA

●Electrical and optical characteristics curves

Fig.1 Dark Current vs. Ambient Temperature

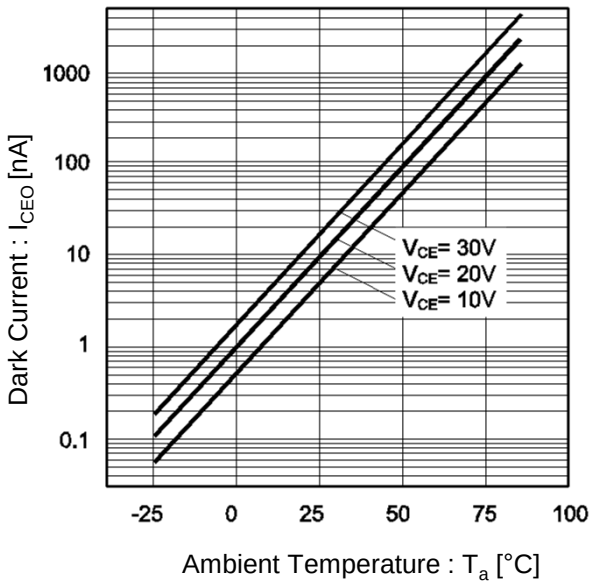


Fig.2 Relative Output vs. Ambient Temperature

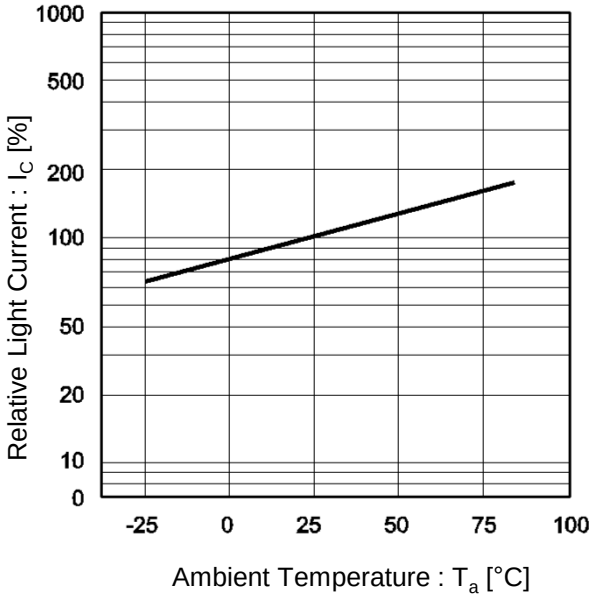


Fig.3 Light Current vs. Emitter Strength

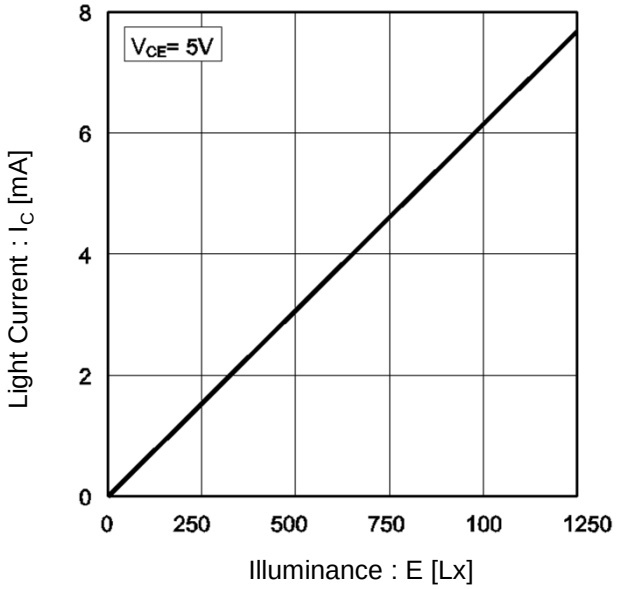
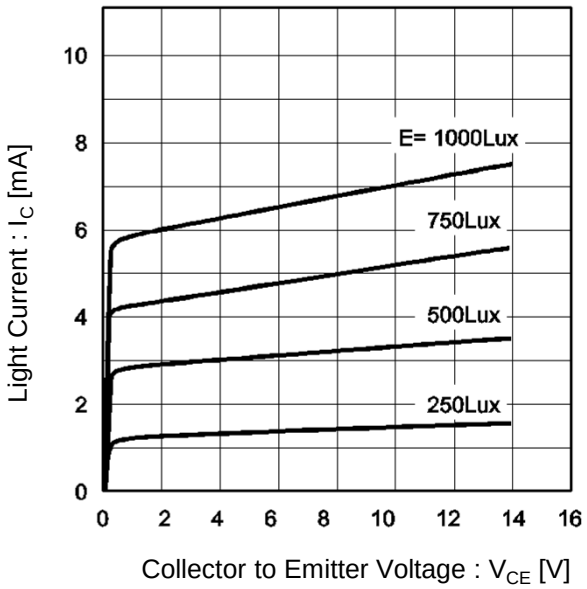


Fig.4 Output Characteristics



●Electrical and optical characteristics curves

Fig.5 Spectral Sensitivity

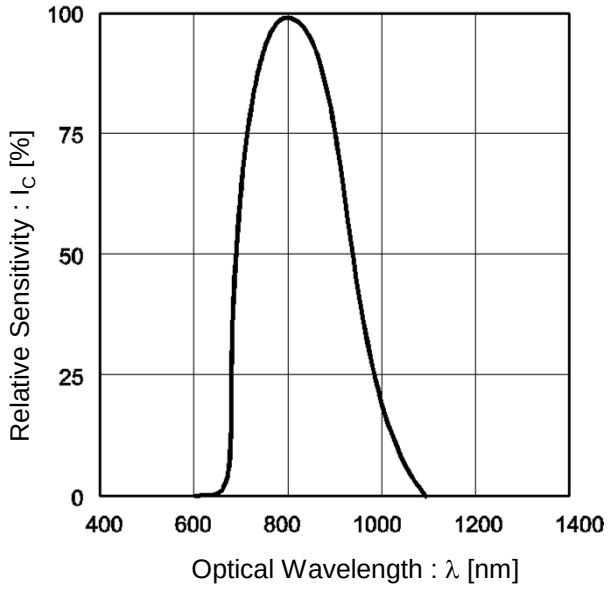


Fig.6 Collector Power Dissipation vs. Ambient Temperature

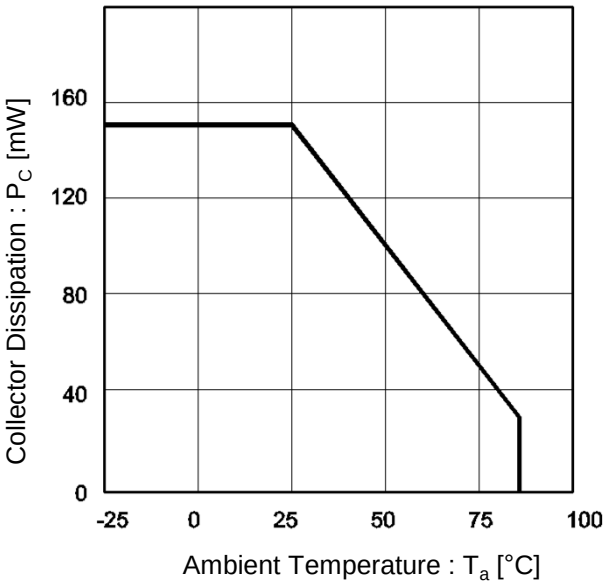
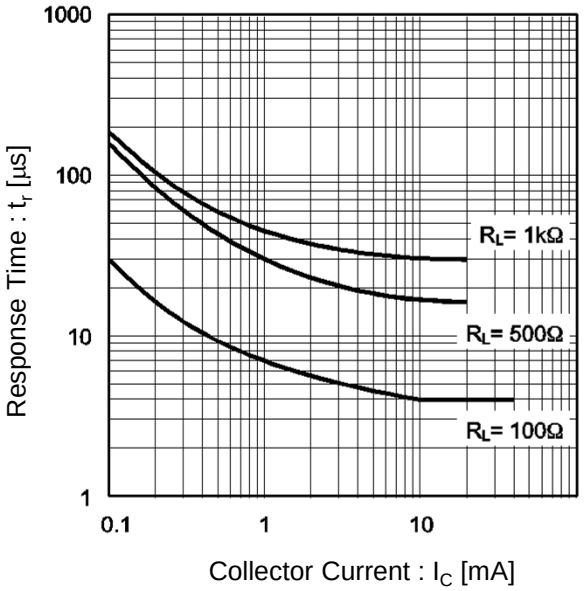
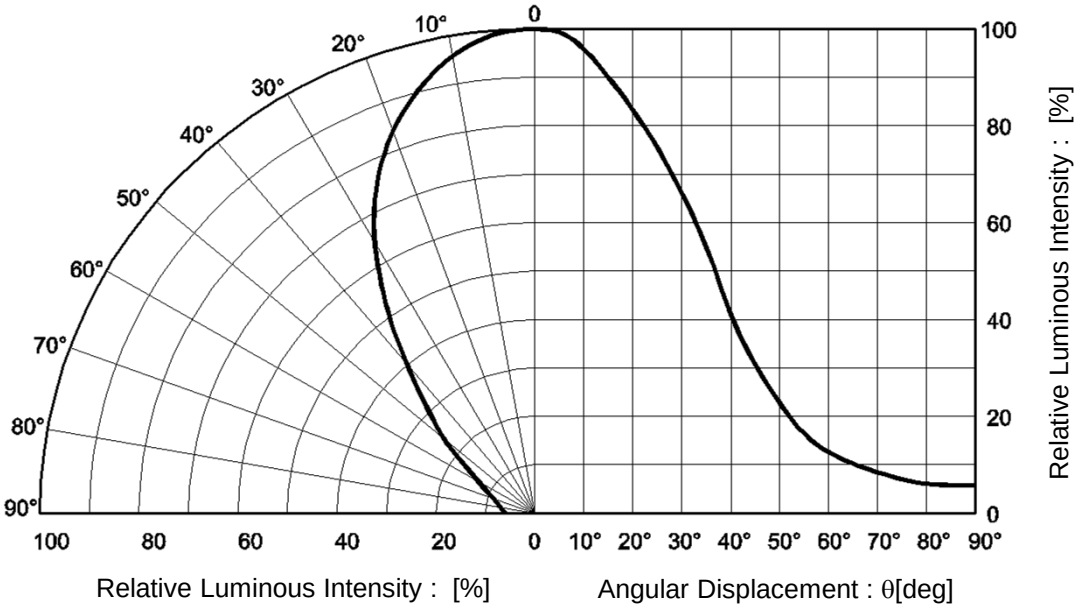


Fig.7 Response time vs.Collector Current



●Electrical and optical characteristics curves

Fig.8 Directional Pattern



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