# 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.

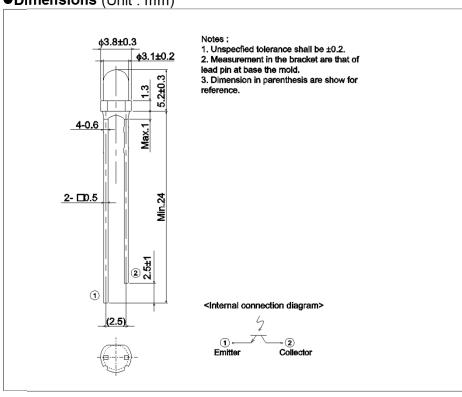
#### Applications

- · Optical control equipment
- · Receiver for sensors

#### Features

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

#### ● **Dimensions** (Unit: mm)



#### Outline



#### • Absolute maximum ratings $(T_a = 25^{\circ}C)$

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{\sf CEO}$	32	V
Emitter-collector voltage	V <sub>ECO</sub>	5	V
Collector current	I <sub>C</sub>	30	mA
Collector power dissipation	P <sub>C</sub>	150	mW
Operating temperature	T <sub>opr</sub>	-25 to +85	°C
Storage temperature	T <sub>stg</sub>	-30 to +85	°C

## •Electrical and optical characteristics ( $T_a = 25$ °C)

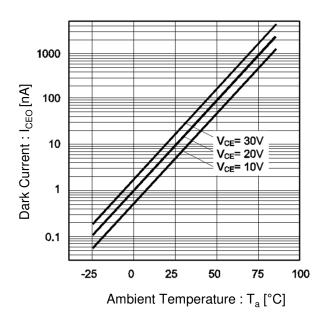
Parameter	Symbol	Conditions	Values			1124
			Min.	Тур.	Max.	Unit
Light current	I <sub>C</sub>	V <sub>CE</sub> =5V, E=500Lx	2.0	-	1	mA
Dark current	I <sub>CEO</sub>	V <sub>CE</sub> =10V (Black box)	-	-	0.5	μΑ
Peak sensitivity wavelength	λ <sub>p</sub>	-	-	800	-	nm
Collector-emitter saturationvoltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =1mA, E=500Lx	-	-	0.4	V
Half-angle	θ <sub>1/2</sub>	-	-	±36	-	deg
Response time	tr∙tf	$V_{CC} = 5V$ , $I_{C} = 1 \text{ mA}$ , $R_{L} = 100\Omega$	-	10	-	μѕ

#### ● Classified table of rank

Item	Light current : I <sub>C</sub>	Unit
L	2.0 to 5.0	mA
М	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



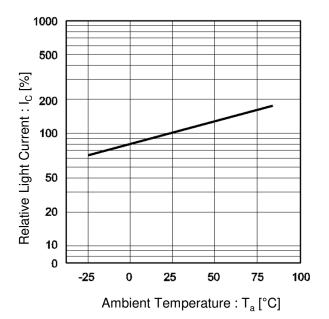


Fig.3 Light Current vs. Emitter Strength

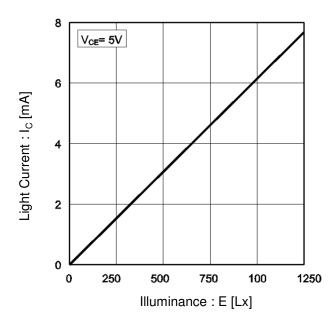
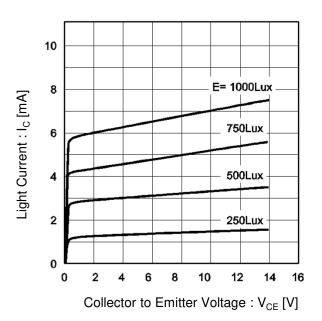


Fig.4 Output Characteristics



### •Electrical and optical characteristics curves

Fig.5 Spectral Sensitivity

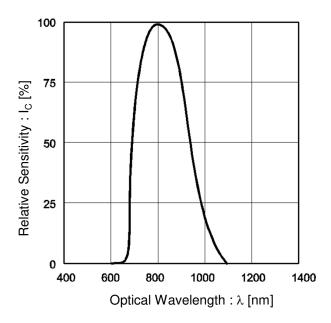


Fig.6 Collector Power Dissipation vs. Ambient Temperature

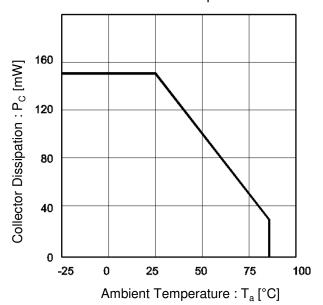
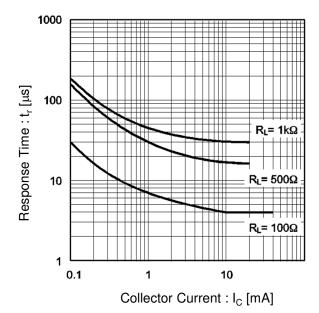
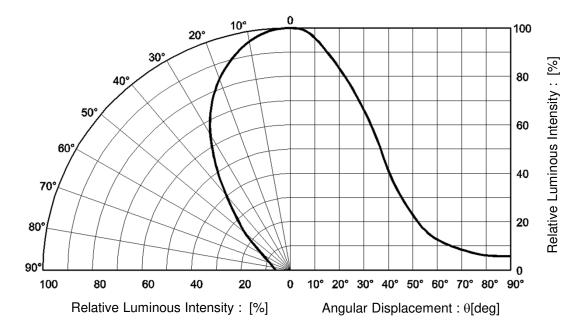


Fig.7 Response time vs.Collector Current



### •Electrical and optical characteristics curves

Fig.8 Directional Pattern



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