

# Phototransistor, top view type

## RPT-38PB3F

The RPT-38PB3F 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.

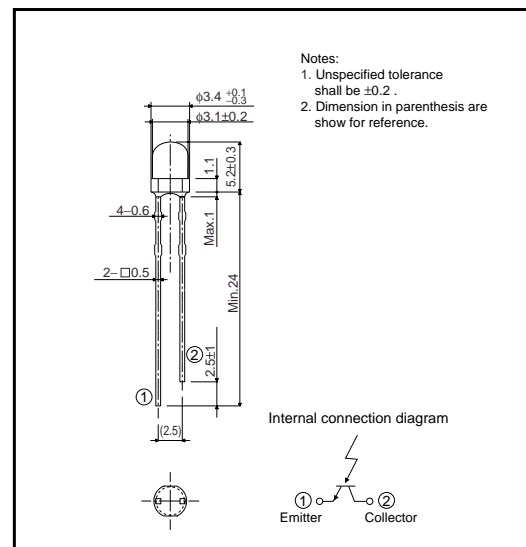
### ●Application

Optical control equipment  
Receiver for sensors

### ●Features

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

### ●External dimensions (Units : mm)



### ●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-emitter voltage	$V_{CE0}$	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~+85	°C
Storage temperature	$T_{stg}$	-30~+100	°C

### ●Electrical and optical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Light current	$I_C$	2.0	-	-	mA	$V_{CE}=5V, E=500Lx$
Dark current	$I_{CEO}$	-	-	0.5	$\mu A$	$V_{CE}=10V$ (Black box)
Peak sensitivity wavelength	$\lambda_P$	-	800	-	nm	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_C=1mA, E=500Lx$
Half-angle	$\theta_{1/2}$	-	$\pm 36$	-	deg	-
Response time	$t_r-t_f$	-	10	-	$\mu s$	$V_{CC}=5V, I_C=1mA, R_L=100\Omega$

Sensors

●Electrical and optical characteristic curves

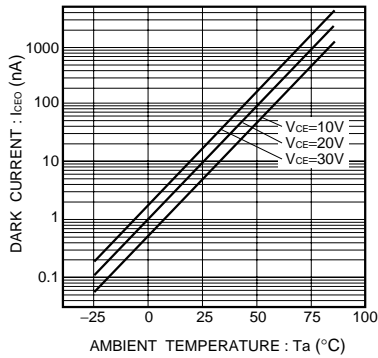


Fig.1 Dark current vs. ambient temperature

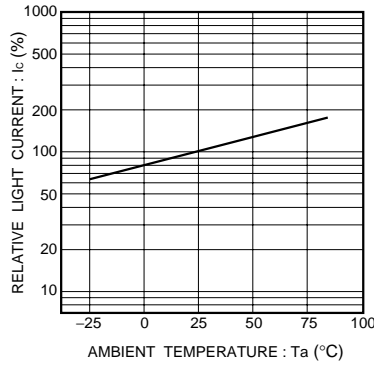


Fig.2 Relative output vs. ambient temperature

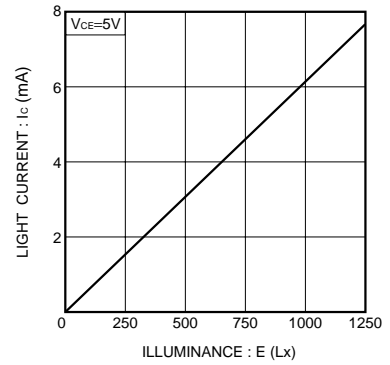


Fig.3 Light current vs. irradiance

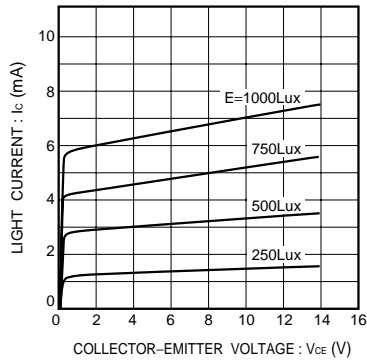


Fig.4 Output characteristics

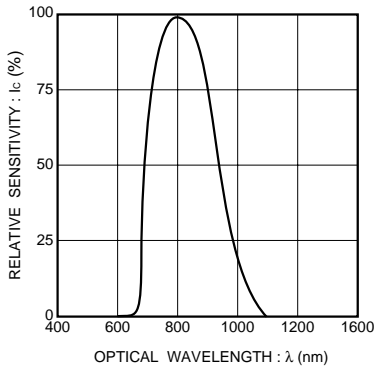


Fig.5 Spectral sensitivity

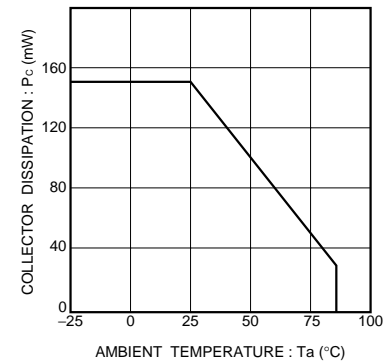


Fig.6 Collector dissipation vs. ambient temperature

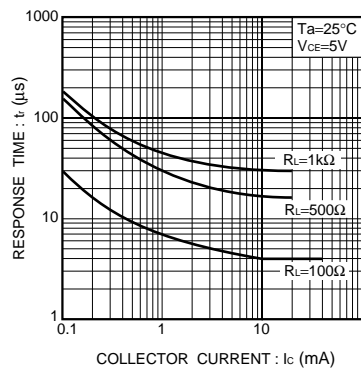


Fig.7 Response time vs. collector current

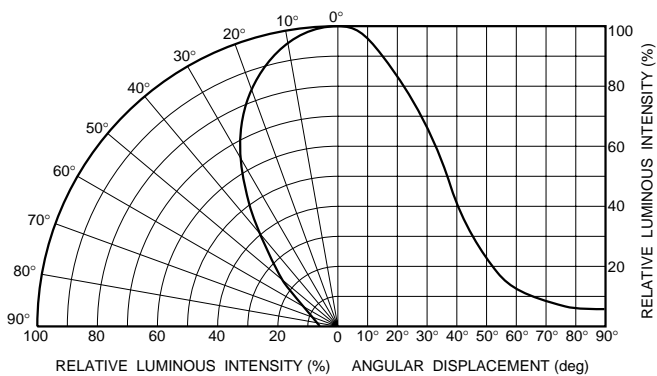


Fig.8 Directional pattern