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.

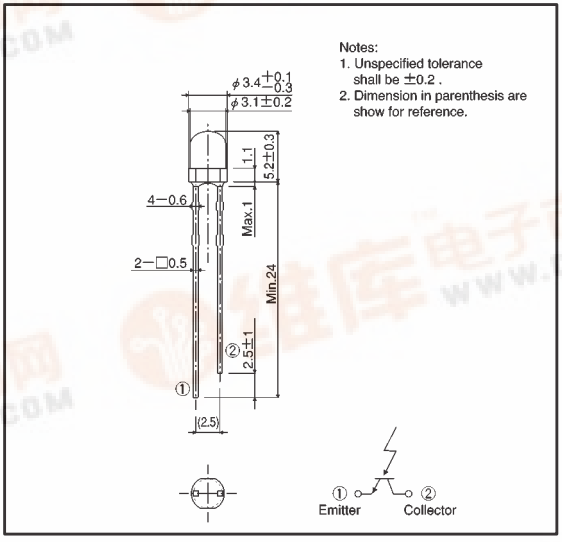
●Applications

Optical control equipment

●Features

1) High sensitivity.
2) Almost no effect from stray light.
3) Low cost plastic package.

●External dimension (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	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	Topr	−25～+85	℃
Storage temperature	Tstg	−30～+100	℃

●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	μA	V_{CE}=10V(Black box)
Peak sensitivity wavelength	λ_P	—	800	—	nm	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	I_C=1mA, E=500Lx
Half-angle	$\theta_{1/2}$	—	±36	—	deg	—
Response time	tr・tf	—	10	—	μs	V_{CC}=5V, I_C=1mA, R_L=100Ω

●Electrical and optical characteristic curves

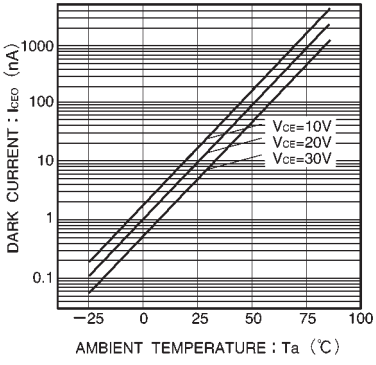


Fig.1 Dark current vs. ambient temperature

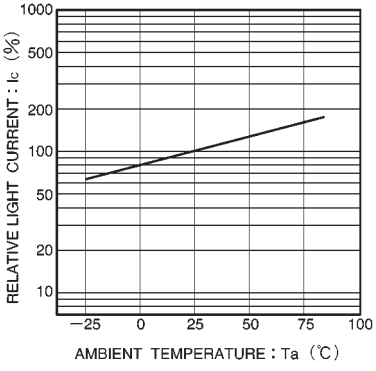


Fig.2 Relative output vs. ambient temperature

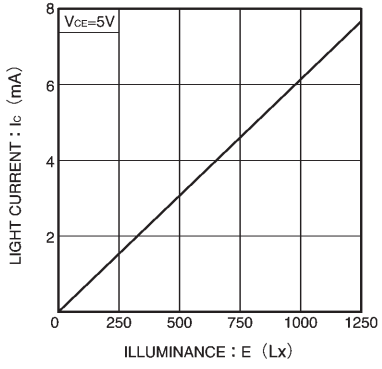


Fig.3 Light current vs. irradiance

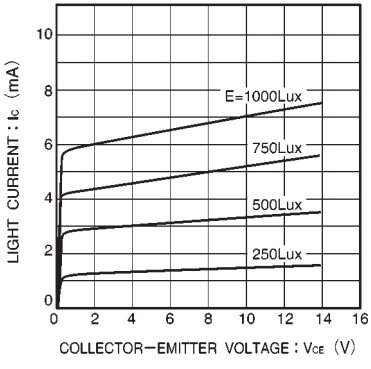


Fig.4 Output characteristics

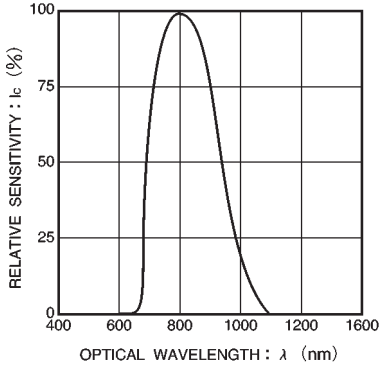


Fig.5 Spectral sensitivity

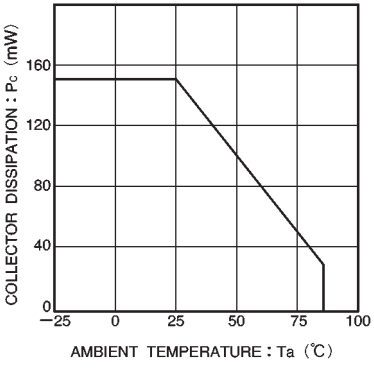


Fig.6 Collector dissipation vs. ambient temperature

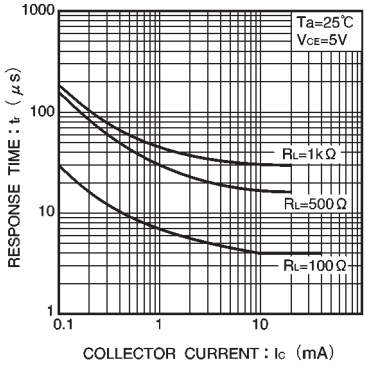


Fig.7 Response time vs. collector current

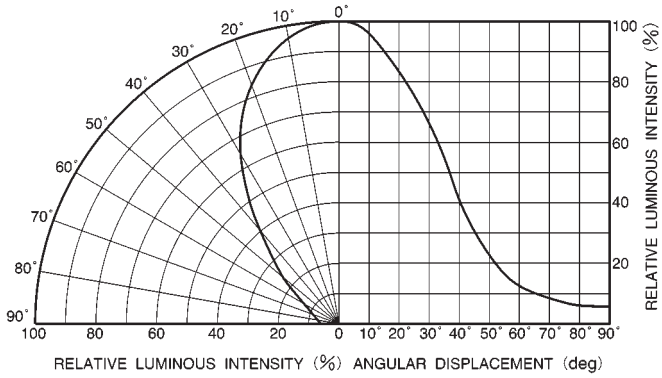


Fig.8 Directional pattern