

Phototransistor, side view type

RPM-20PB

The RPM-20PB is a phototransistor in a side-facing package. High sensitivity with $\phi 1.85$ lens.

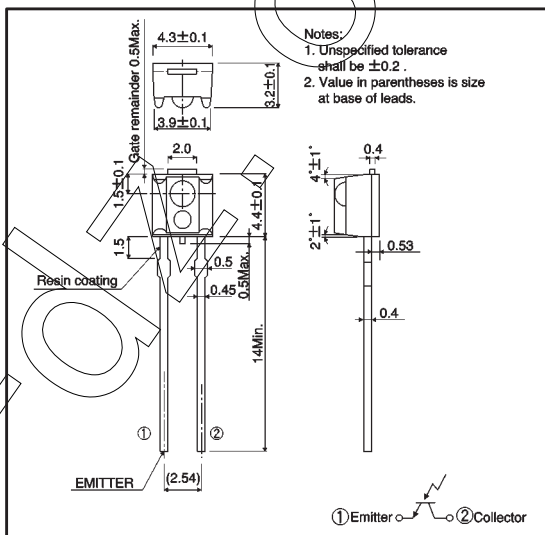
●Applications

Optical control equipment
Receiver for sensors

●Features

- 1) High sensitivity.
- 2) Molded in plastic with a visible light filter. (filters out light 750 nm or less)
- 3) Side-facing detector.

●External dimensions (Unit: mm)



●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

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	100	mW
Operating temperature	T_{opr}	$-25 \sim +85$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-30 \sim +100$	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Light current	I_c	0.5	—	—	mA	$V_{CE}=5V, E=500Lx$
Dark current	I_{CE0}	—	—	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	$I_c=0.1mA, E=500Lx$
Half-angle	$\theta_{1/2}$	—	± 14	—	deg	
Response time	$t_r \cdot t_f$	—	10	—	μs	$V_{CE}=5V, I_c=1mA, R_L=100\Omega$

●Electrical and optical characteristic curves

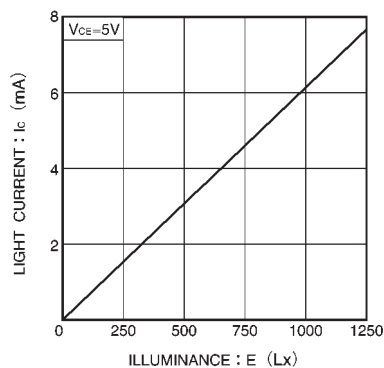


Fig.1 Collector current vs. emitting strength

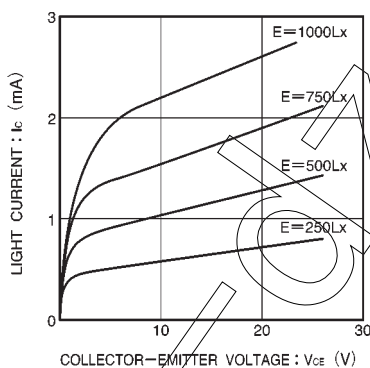


Fig.2 Output characteristics

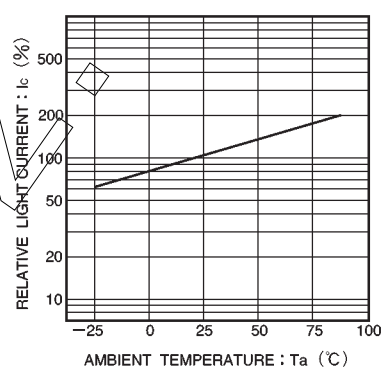


Fig.3 Relative output vs. ambient temperature

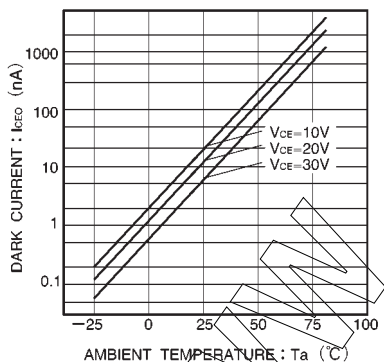


Fig.4 Dark current vs. ambient temperature

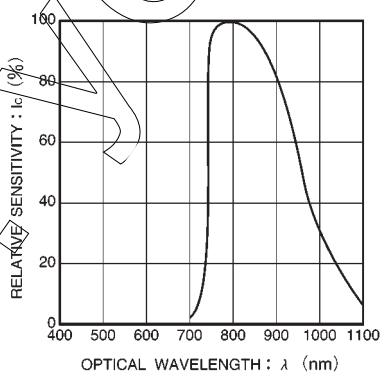


Fig.5 Spectral sensitivity

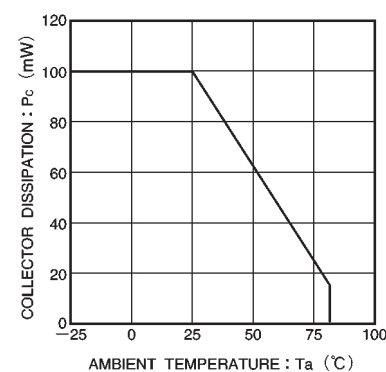


Fig.6 Collector power dissipation vs. ambient temperature

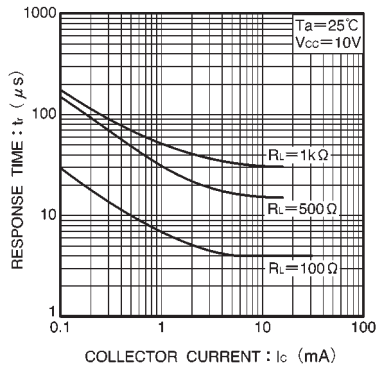


Fig.7 Response time vs.
collector current

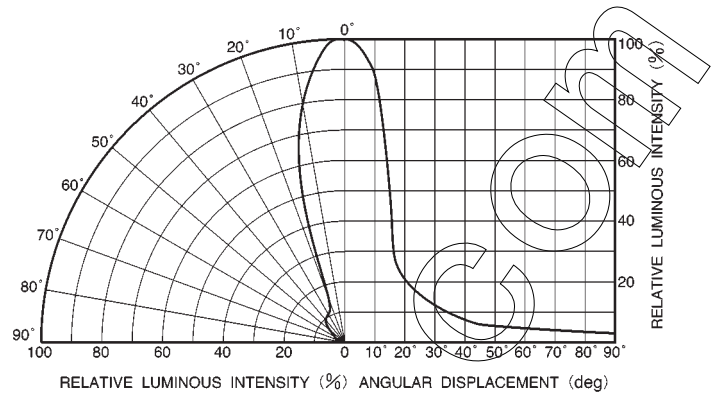


Fig.8 Directional pattern