

# High Sensitivity Chip Sensor, Side view type

## RPM-012PB

The RPM-012PB is ultra small size and high sensitivity chip sensor. Original technology, original structure and original optical design enable to use Automatic mounting machine, Reflow, ultra small size, high sensitivity.

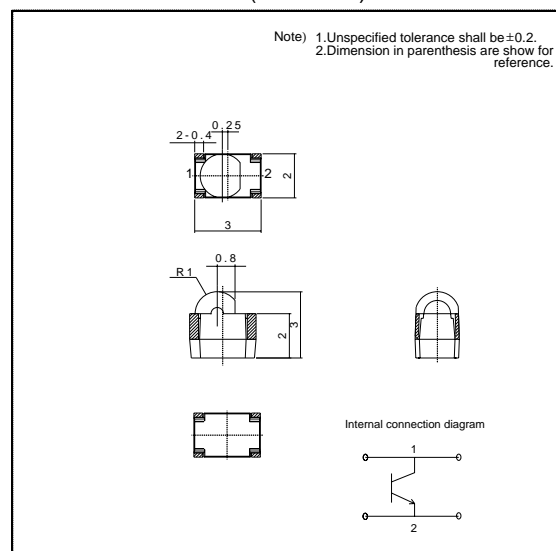
### ●Application

Optical control equipment  
Receiver for sensors

### ●Features

- 1) High sensitivity by  $\phi 2$  lenze.
- 2) Ultra-compact surface mount package.  
(3mm x 3mm x 2mm)
- 3) It is possible to do Reflow.

### ●External dimensions (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           | $I_C$     | 20       | mA   |
| Collector power dissipation | $P_C$     | 75       | mW   |
| Operating temperature       | $T_{opr}$ | -30~+85  | °C   |
| Storage temperature         | $T_{stg}$ | -40~+100 | °C   |

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

| Parameter                            | Symbol         | Min. | Typ.     | Max. | Unit    | Conditions                          |
|--------------------------------------|----------------|------|----------|------|---------|-------------------------------------|
| Light current                        | $I_C$          | 0.56 | 1.6      | 2.8  | 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       | $I_C=0.1mA, E=500Lx$                |
| Half-angle                           | $\theta_{1/2}$ | -    | $\pm 12$ | -    | deg     | -                                   |
| Response time                        | $tr \cdot tf$  | -    | 10       | -    | $\mu s$ | $V_{CC}=5V, I_C=1mA, R_L=100\Omega$ |

Sensors

●Electrical and optical characteristic curves

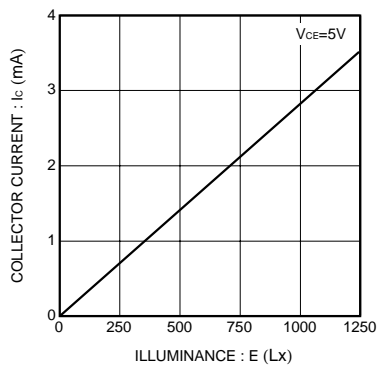


Fig.1 Collector current-Illuminance

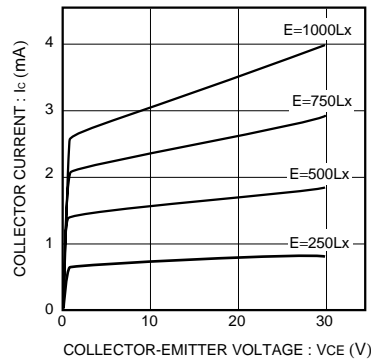


Fig.2 Output characteristics

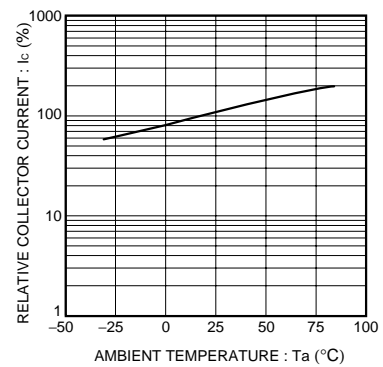


Fig.3 Relative output-Ambient temperature

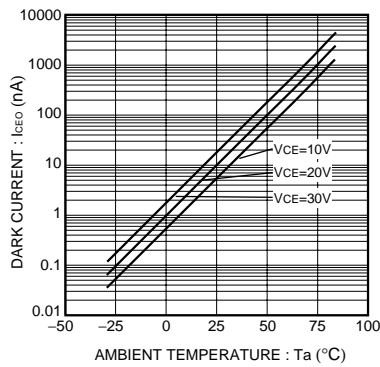


Fig.4 Dark current-Ambient temperature

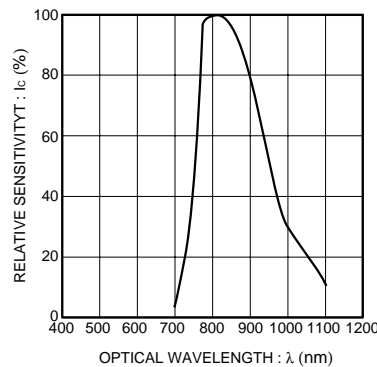


Fig.5 Spectral sensitivity characteristics

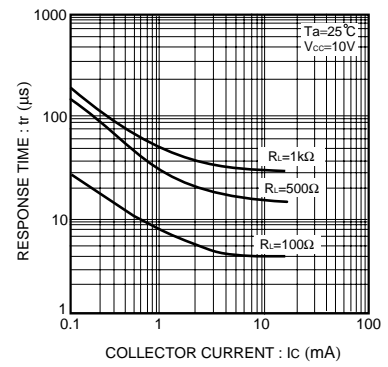


Fig.6 Response time-Collector current

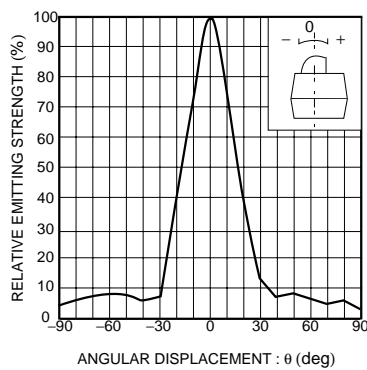


Fig.7 Directional pattern(1)

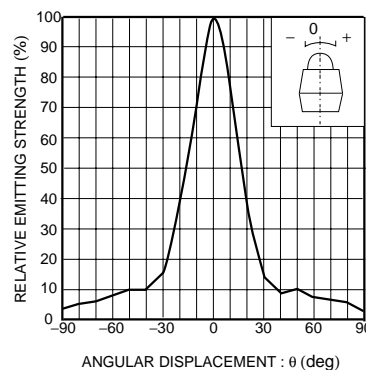


Fig.8 Directional pattern(2)