

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.

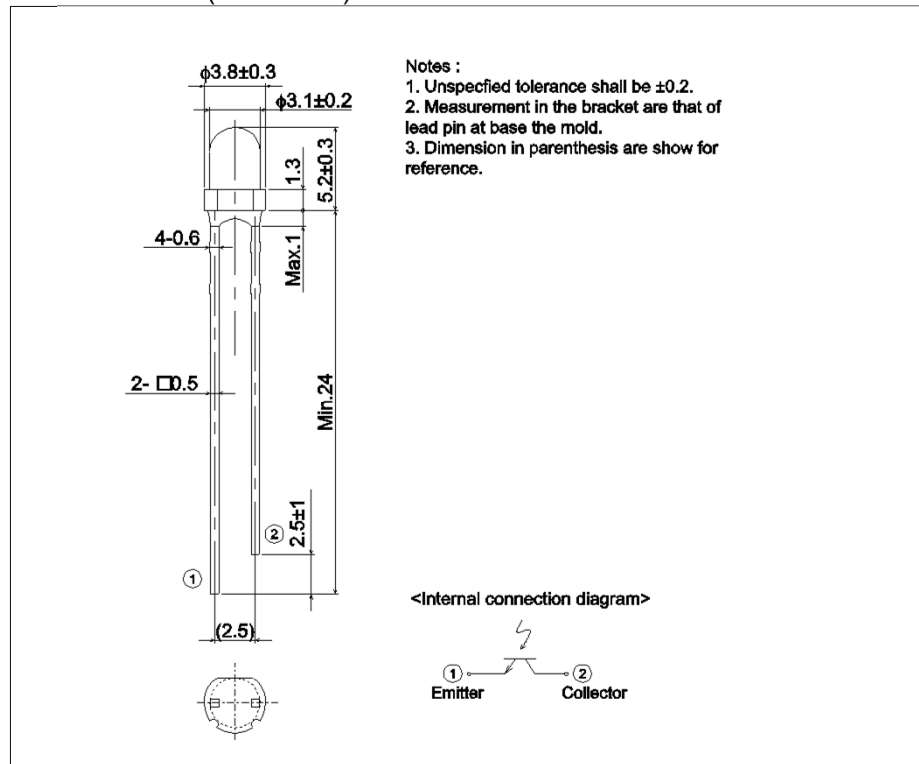
### ●Applications

- Optical control equipment
- Receiver for sensors

### ●Features

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

### ●Dimensions (Unit : mm)



### ●Outline



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

| Parameter                   | Symbol    | Value      | 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       | $T_{opr}$ | -25 to +85 | $^\circ\text{C}$ |
| Storage temperature         | $T_{stg}$ | -30 to +85 | $^\circ\text{C}$ |

●Electrical and optical characteristics ( $T_a = 25^\circ\text{C}$ )

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

●Electrical and optical characteristics curves

Fig.1 Dark Current vs. Ambient Temperature

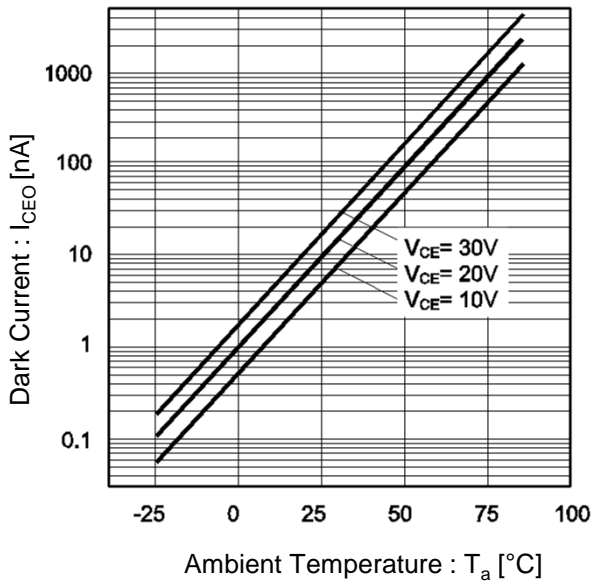


Fig.2 Relative Output vs. Ambient Temperature

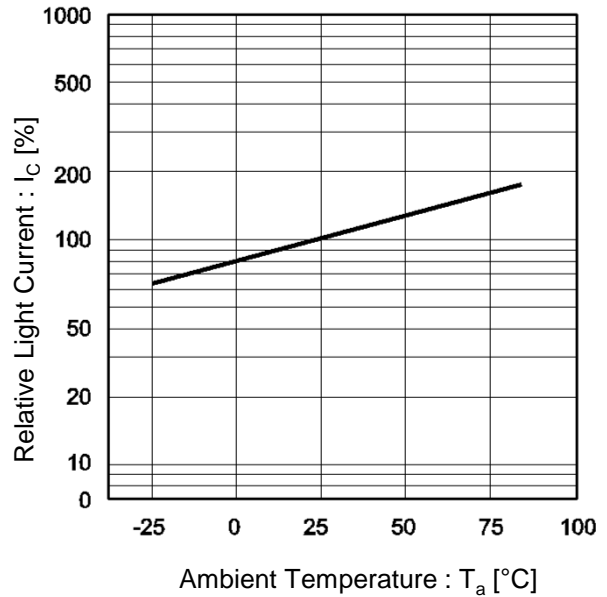


Fig.3 Light Current vs. Emitter Strength

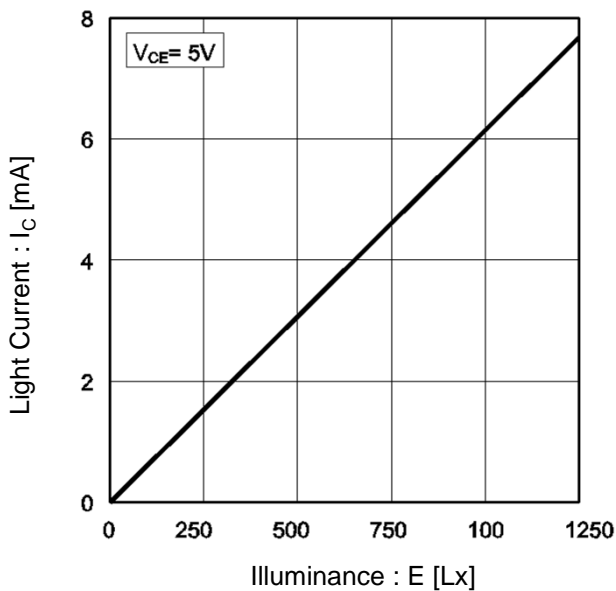
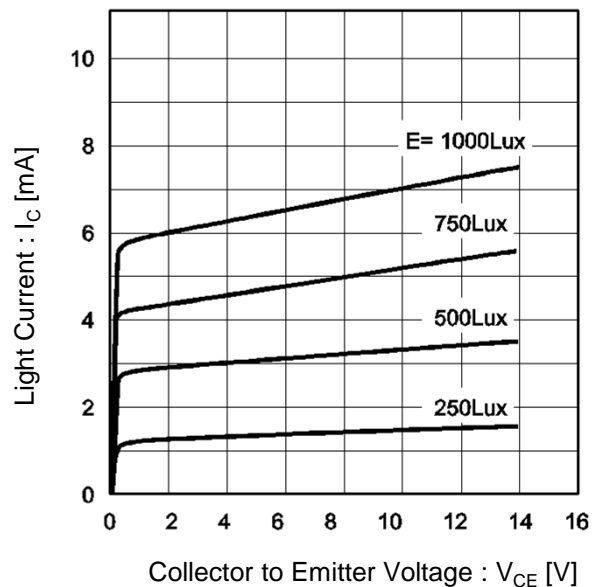


Fig.4 Output Characteristics



●Electrical and optical characteristics curves

Fig.5 Spectral Sensitivity

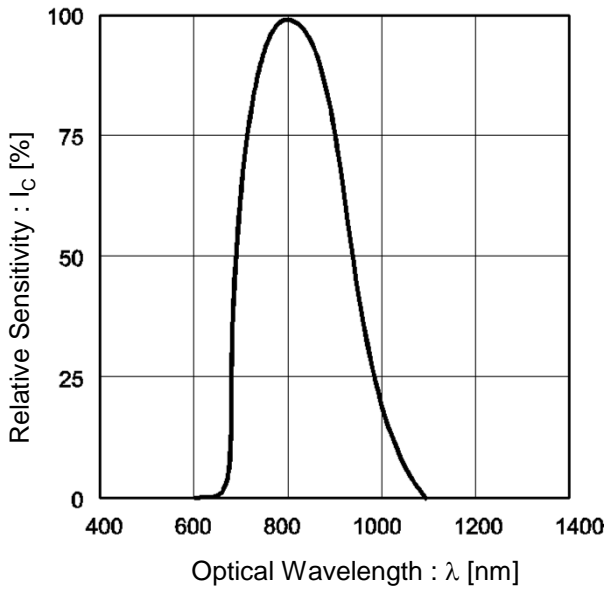


Fig.6 Collector Power Dissipation vs. Ambient Temperature

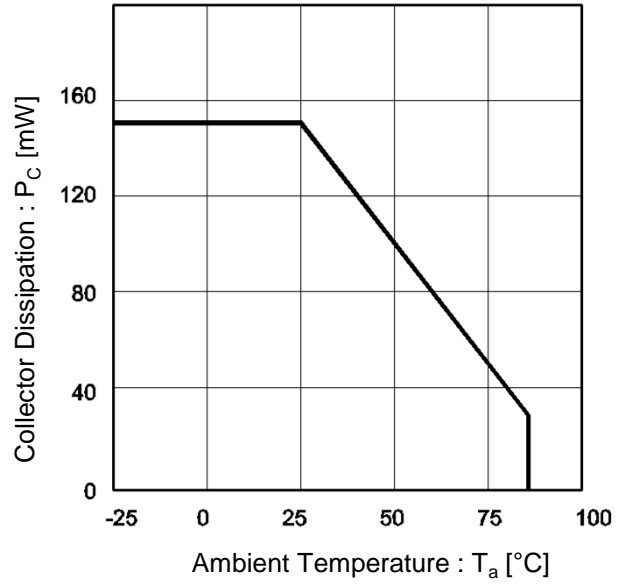
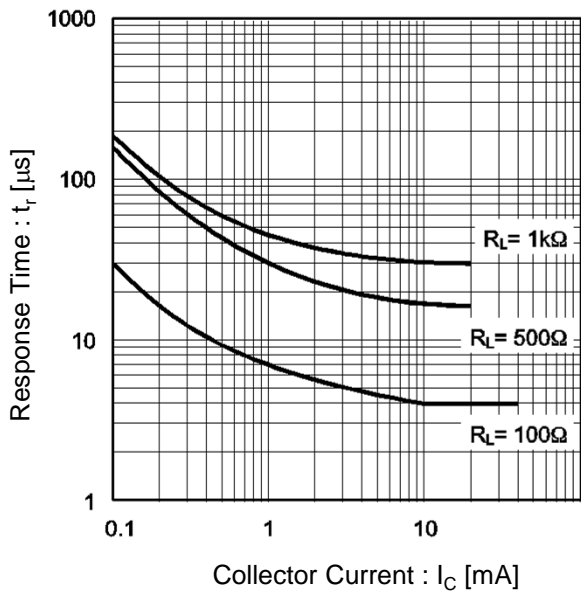
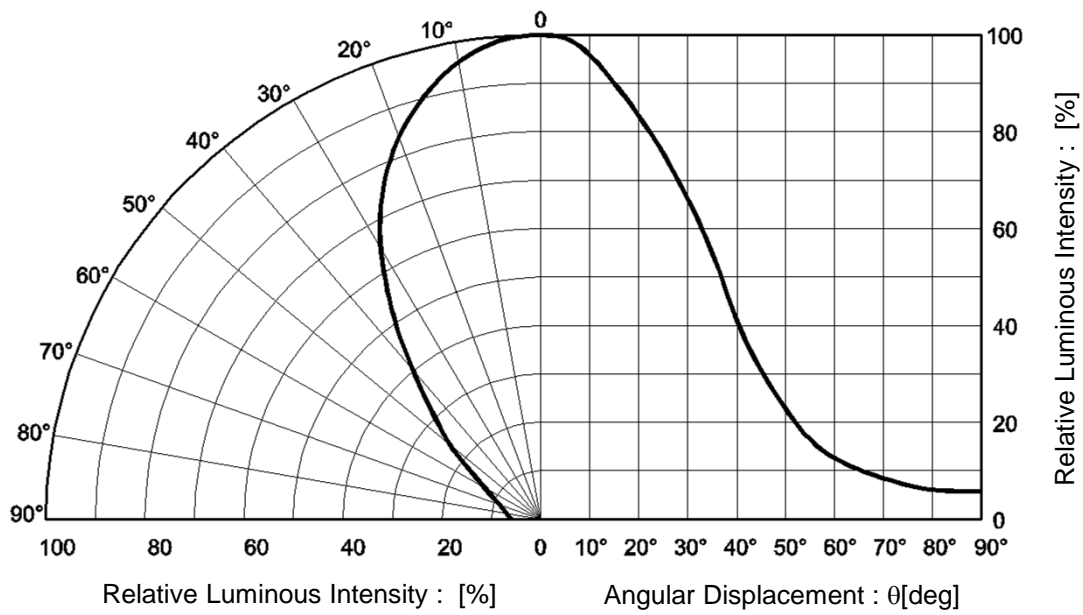


Fig.7 Response time vs. Collector Current



●Electrical and optical characteristics curves

Fig.8 Directional Pattern



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