

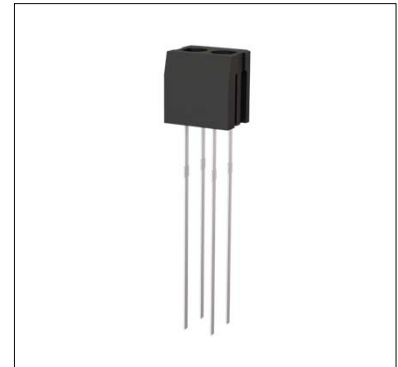
●Applications

- Compact disc players
- Copiers
- Game machines
- Office automation equipment

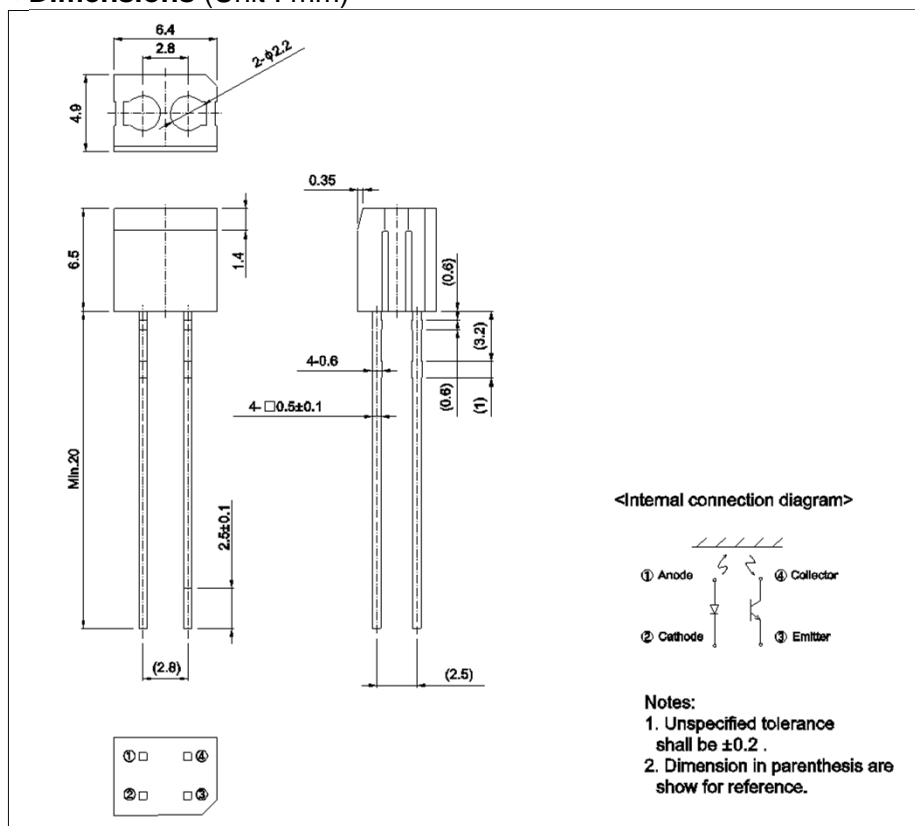
●Features

- 1) A plastic lens is used for high sensitivity.
- 2) A built-in visible light filter minimizes the influence of stray light.
- 3) Lightweight and compact.

●Outline



●Dimensions (Unit : mm)



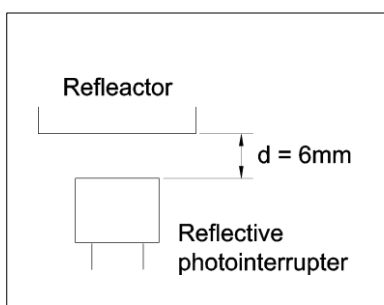
●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

| Parameter | | Symbol | Value | Unit |
|---------------------------|-----------------------------|-----------|------------|------------------|
| Input (LED) | Forward current | I_F | 50 | mA |
| | Reverse voltage | V_R | 5 | V |
| | Power dissipation | P_D | 80 | mW |
| Output (photo-transistor) | Collector-emitter voltage | V_{CEO} | 30 | V |
| | Emitter-collector voltage | V_{ECO} | 4.5 | V |
| | Collector current | I_C | 30 | mA |
| | Collector power dissipation | P_C | 80 | 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. | |
| Input characteristics | Forward voltage | V_F | $I_F = 50\text{mA}$ | - | 1.34 | 1.6 | V |
| | Reverse current | I_R | $V_R = 5\text{V}$ | - | - | 10 | μA |
| Output characteristics | Dark current | I_{CEO} | $V_{\text{CE}} = 10\text{V}$ | - | - | 0.5 | μA |
| | Peak sensitivity wavelength | λ_p | - | - | 800 | - | nm |
| Transfer characteristics | Collector current | I_C | $V_{\text{CE}} = 2\text{V}, I_F = 10\text{mA} *$ | 0.08 | 0.3 | 0.8 | mA |
| | Collector-emitter saturation voltage | $V_{\text{CE(sat)}}$ | $I_F = 20\text{mA}, I_C = 0.1\text{mA} *$ | - | 0.1 | 0.3 | V |
| | Response time | tr·tf | $V_{\text{CC}} = 5\text{V}, I_F = 20\text{mA}, R_L = 100\Omega *$ | - | 10 | - | μs |
| Infrared light emitter diode | Cut-off frequency | f_c | $I_F = 50\text{mA}$ | - | 1 | - | MHz |
| | Peak light emitting wavelength | λ_p | * Non-coherent Infrared light emitting diode used. | - | 940 | - | nm |
| Photo transistor | Response time | tr·tf | $V_{\text{CC}} = 5\text{V}, I_C = 1\text{mA}, R_L = 100\Omega$ *This product is not designed to be protected against electromagnetic wave. | - | 10 | - | μs |
| | Maximum sensitivity wavelength | λ_p | - | - | 800 | - | nm |

* Reflector object : Standard white paper. (Reflection ratio = 90%)



●Electrical and optical characteristics curves

Fig.1 Relative Output Current vs.Distance

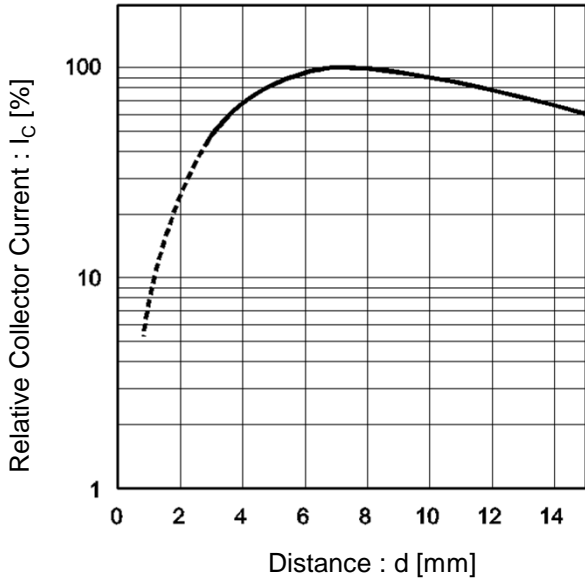


Fig.2 Forward Current vs.Ambient Temperature

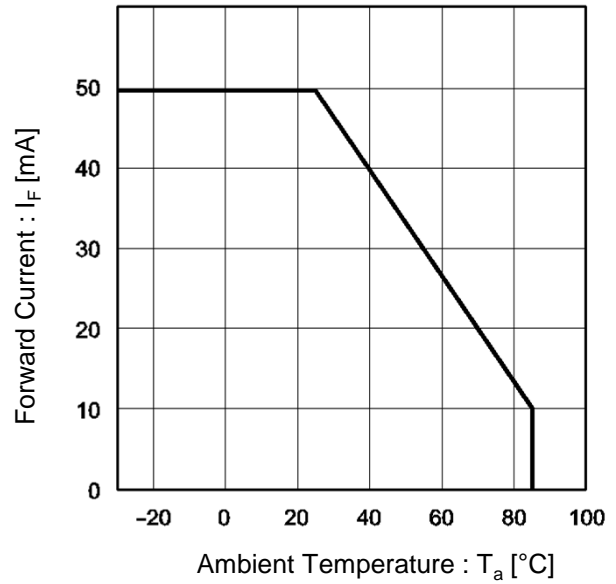


Fig.3 Forward Current vs. Forward Voltage

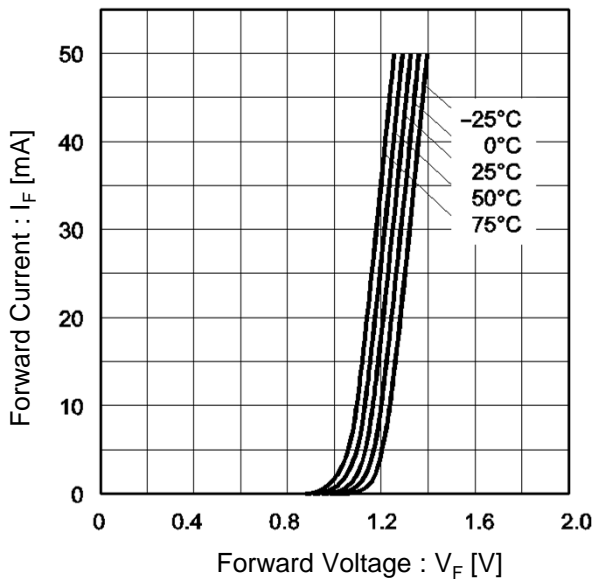
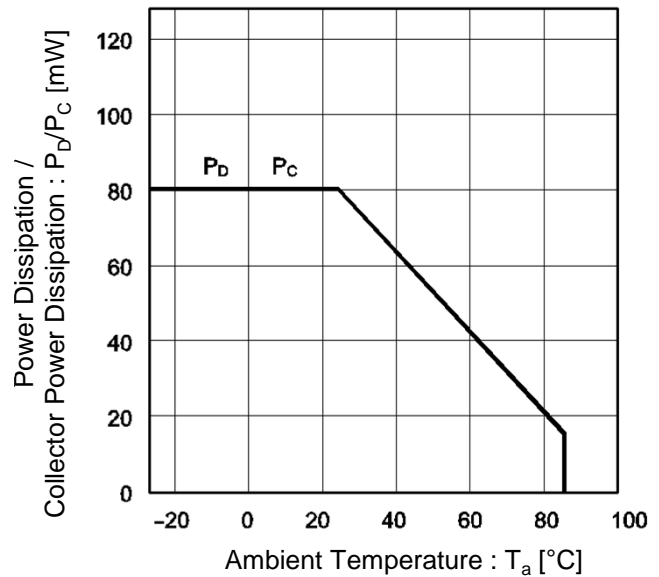


Fig.4 Power Dissipation / Collector Power Dissipation vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Relative Output vs. Ambient Temperature

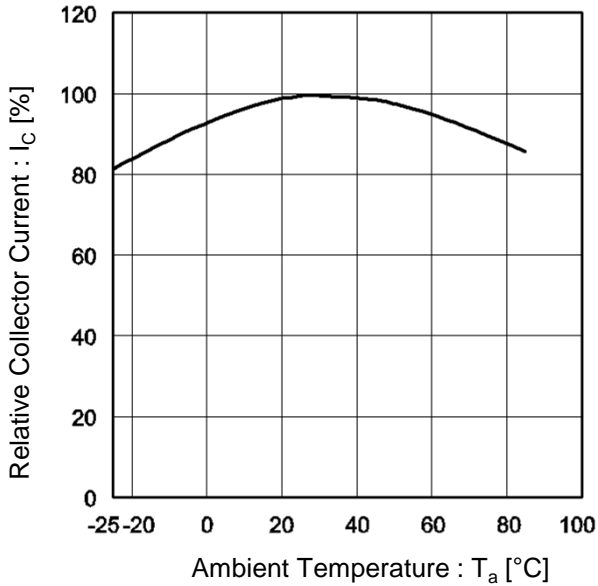


Fig.6 Collector Current vs. Forward Current

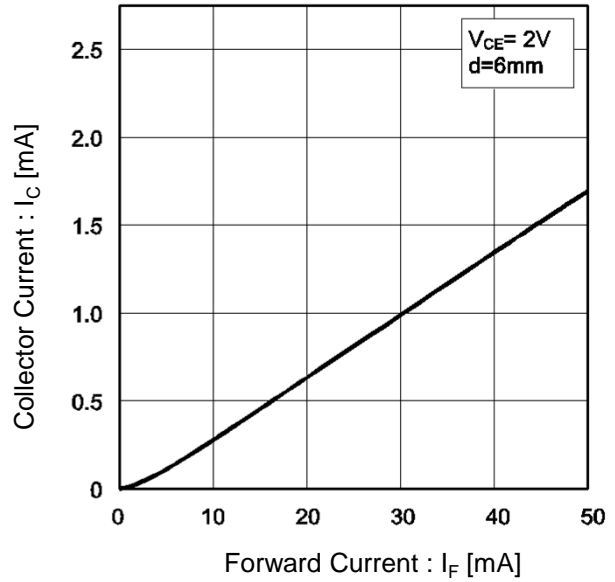


Fig.7 Output Characteristics

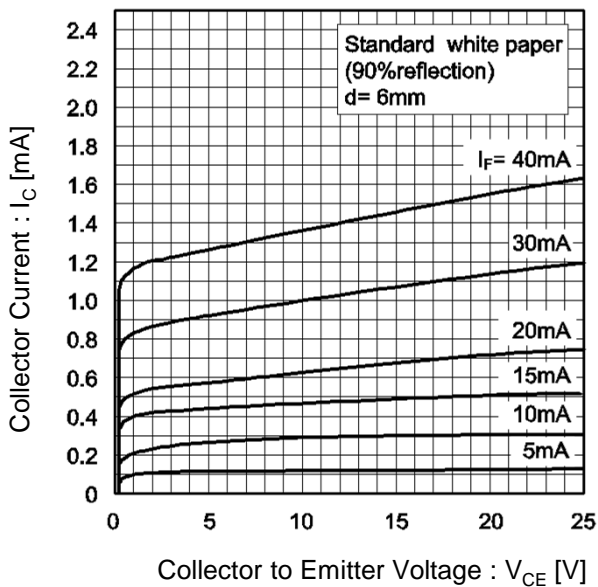
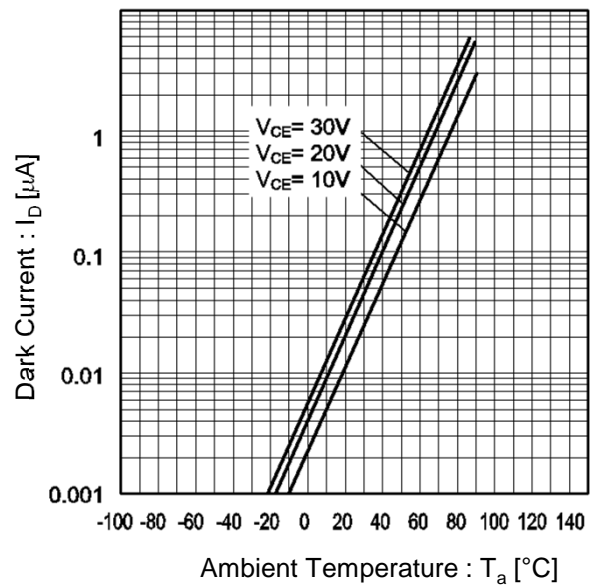


Fig.8 Dark Current vs. Ambient Temperature



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