

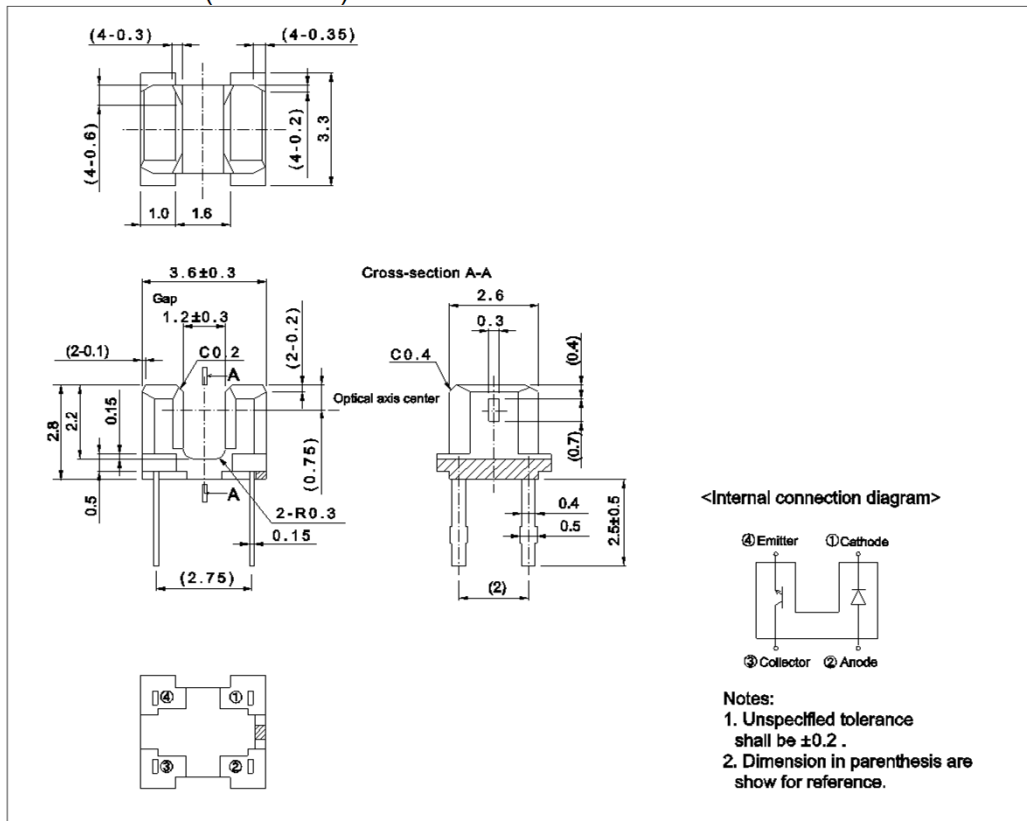
●Applications

- DSC(Digital steal camera)
- DVC(Digital video camera)

●Features

- 1) Ultra-small.
- 2) Gap 1.2mm.

●Dimensions (Unit : mm)



●Outline



●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 | $^\circ\text{C}$ |
| Soldering temperature | | T_{sol} | 260/5 | $^\circ\text{C}/\text{sec}$ |

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

| Parameter | | Symbol | Conditions | Values | | | Unit | |
|------------------------------|--------------------------------------|---------------|--|--|------|------|---------------|---------------|
| | | | | Min. | Typ. | Max. | | |
| Input characteristics | Forward voltage | V_F | $I_F = 50\text{mA}$ | - | 1.3 | 1.6 | V | |
| | Reverse current | I_R | $V_R = 5\text{V}$ | - | - | 10 | μA | |
| Output characteristics | Dark current | I_{CEO} | $V_{CE} = 10\text{V}$ | - | - | 0.5 | μA | |
| | Peak sensitivity wavelength | λ_p | - | - | 800 | - | nm | |
| Transfer characteristics | Collector current | I_C | $V_{CE} = 5\text{V}, I_F = 20\text{mA}$ | 0.45 | 1.8 | 4.95 | mA | |
| | Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_F = 20\text{mA}, I_C = 0.1\text{mA}$ | - | - | 0.4 | V | |
| | Response time | Rise time | t_r | $V_{CC} = 5\text{V}, I_F = 20\text{mA}, R_L = 100\Omega$ | - | 10 | - | μs |
| | | Fall time | t_f | | - | 10 | - | μs |
| Collector rank | A | I_C | $V_{CE} = 5\text{V}, I_F = 20\text{mA}$ | 0.45 | - | 2.33 | mA | |
| | B | | | 0.95 | - | 4.95 | | |
| Infrared diode 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. | - | 950 | - | nm | |
| Photo transistor | Response time | t_r, t_f | $V_{CC} = 5\text{V}, I_C = 1\text{mA}, R_L = 100\Omega$ *This product is not designed to be protected against electromagnetic wave. | - | 10 | - | μs | |
| | Maximum sensitivity wavelength | λ_p | - | - | 800 | - | nm | |

●Electrical and optical characteristics curves

Fig.1 Relative Output Current vs.Distance (I)

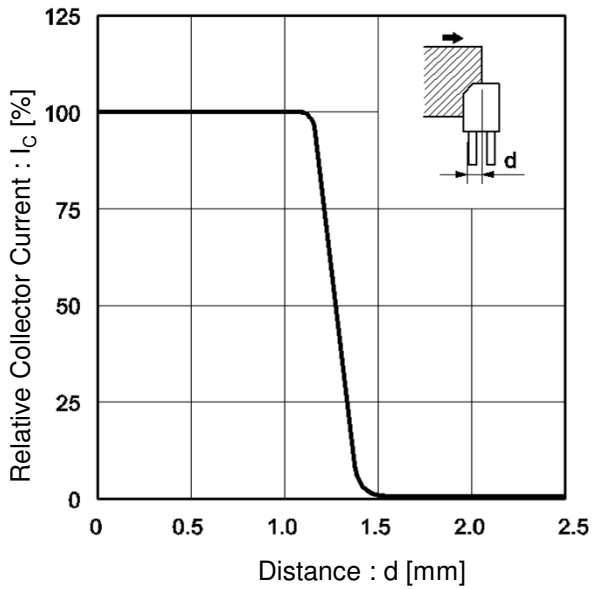


Fig.2 Relative Output Current vs.Distance (II)

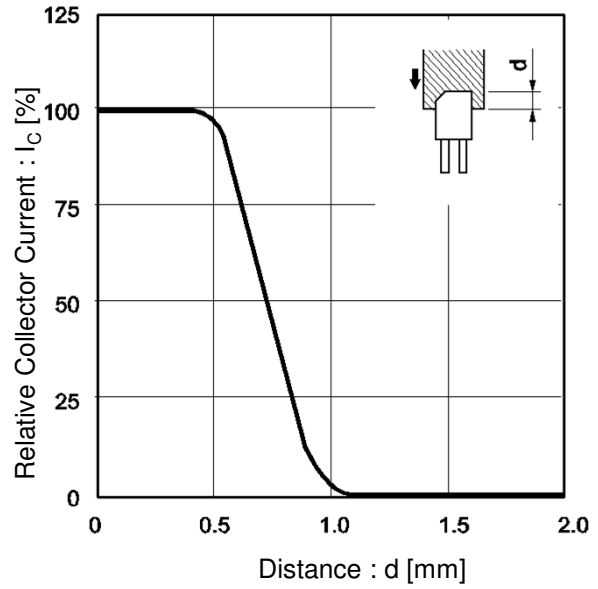


Fig.3 Forward Current Falloff

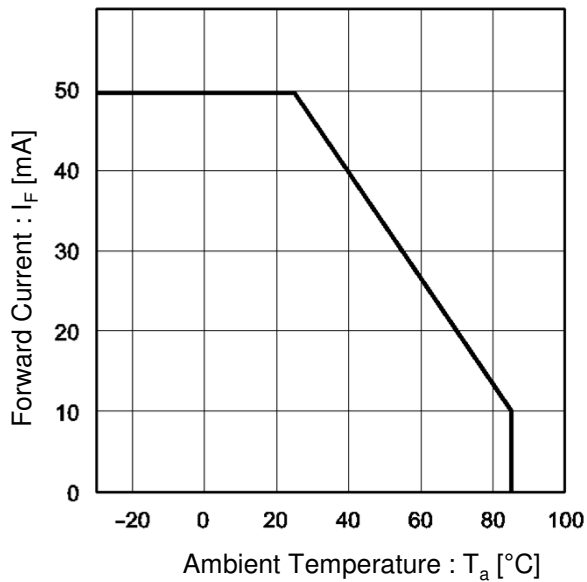
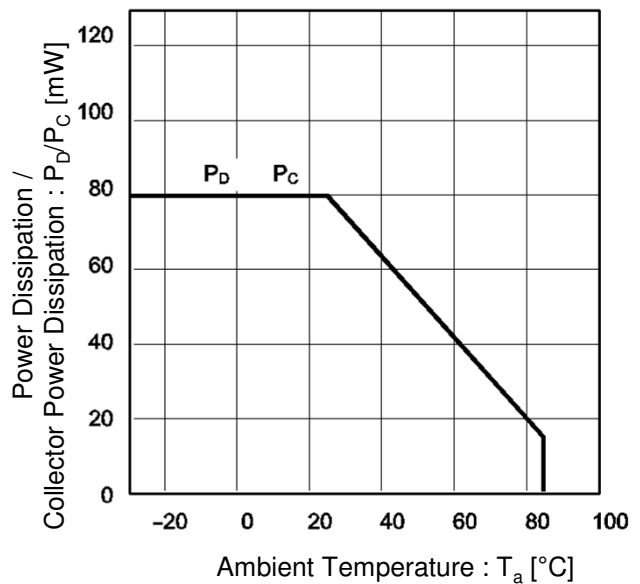


Fig.4 Power Dissipation / Collector Power Dissipation vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Forward Current vs. Forward Voltage

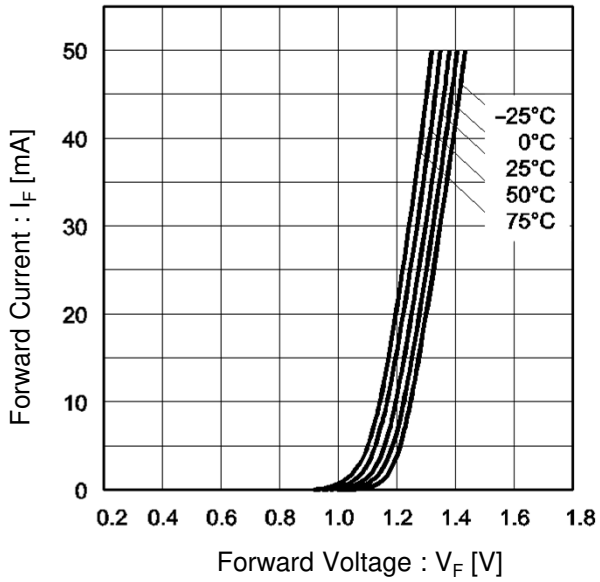


Fig.6 Collector Current vs. Forward Current

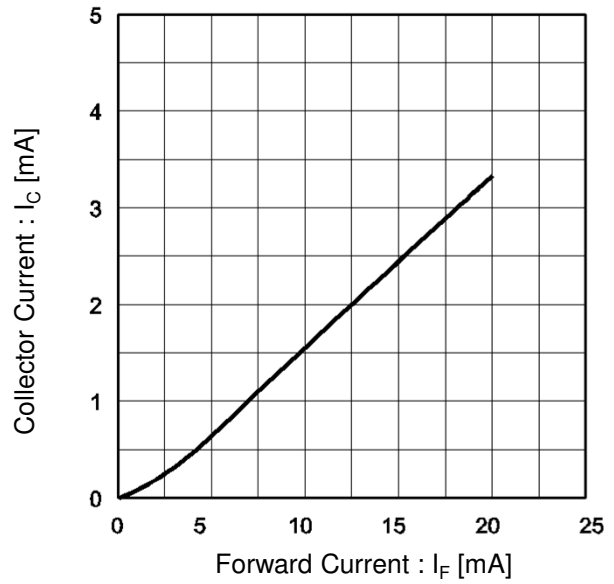


Fig.7 Relative Output vs. Ambient Temperature

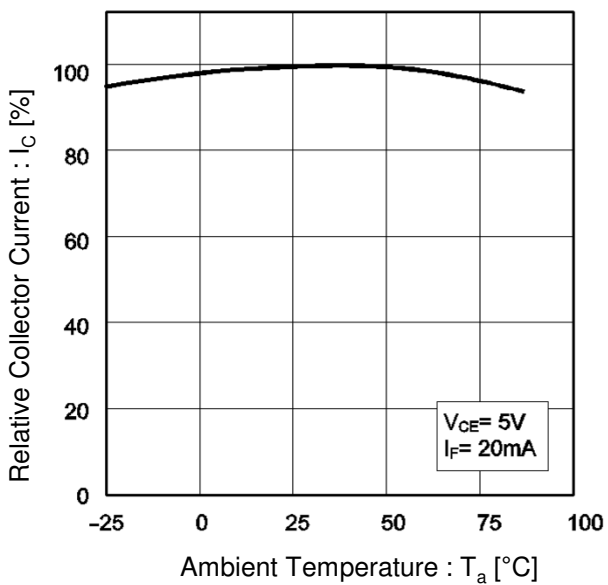
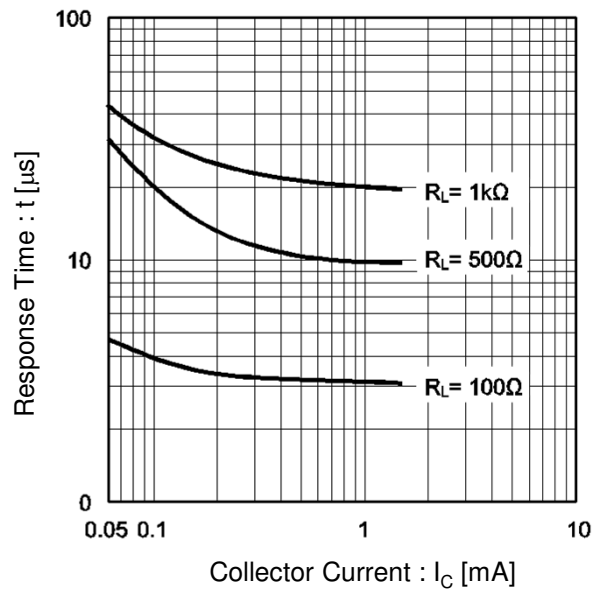


Fig.8 Response Time vs. Collector Current



●Electrical and optical characteristics curves

Fig.9 Dark Current vs. Ambient Temperature

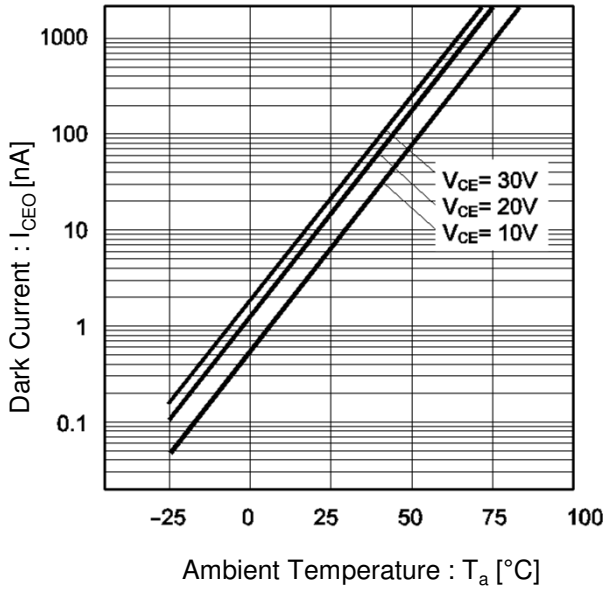


Fig.10 Output Characteristics

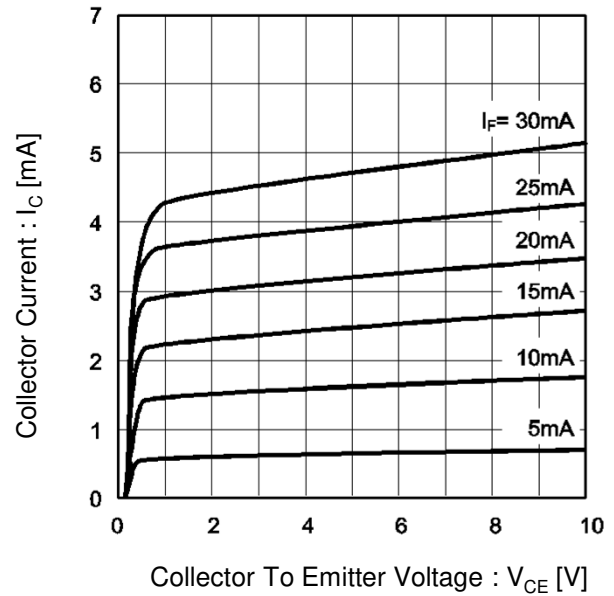
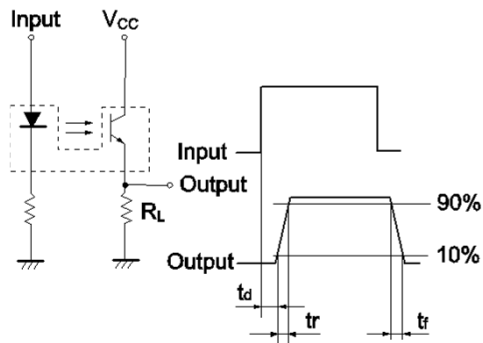


Fig.11 Response Time Measurement Circuit



t_d : Delay time
 t_r : Rise time (time for output current to rise from 10% to 90% of peak current)
 t_f : Fall time (time for output current to fall from 90% to 10% of peak current)

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