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Photointerrupter, Ultraminiature SMD type

Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|------------------|------------|------|
| Forward current | I _F | 50 | mA |
| Reverse voltage | V _R | 5 | V |
| Power dissipation | P _D | 80 | mW |
| Collector-emitter voltage | V _{CE0} | 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} | -30 to +85 | °C |
| Storage temperature | T _{stg} | -40 to +85 | °C |

Applications

DSC(Digital steal camera)
DVC(Digital video camera)
Digital handy phone

Features

- 1) Ultraminiature SMD type.
- 2) Gap 1.2mm.

Electrical and optical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions | |
|-------------------------------|--------------------------------------|--------------------------------|------|------|------|--|---|
| Forward voltage | V _F | - | 1.5 | 1.8 | V | I _F =50mA | |
| Reverse current | I _R | - | 10 | 10 | μA | V _R =5V | |
| Dark current | I _{CEO} | - | 0.1 | 0.1 | μA | V _{CE} =10V | |
| Peak sensitivity wavelength | λ _P | - | 800 | - | nm | - | |
| Transfer characteristics | Collector current | I _C | 0.15 | - | 0.75 | mA | I _F =5mA, V _{CE} =5V |
| | | I _C | 0.9 | - | 3.6 | mA | I _F =20mA, V _{CE} =5V |
| | DC leakage current | I _{leak} | - | - | 5 | mA | I _F =5mA, V _{CE} =5V |
| | Collector-emitter saturation voltage | V _{CE(sat)} | - | - | 0.4 | V | I _F =20mA, I _C =0.1mA |
| Response time | Rise time | t _r | - | 10 | μs | V _{CC} =5V, I _F =20mA, R _L =100Ω | |
| | Fall time | t _f | - | 10 | μs | | |
| Infrared light emitting diode | Peak light emitting wavelength | λ _P | - | 850 | nm | I _F =50mA * Non-coherent Infrared light emitting diode used. | |
| Photo transistor | Response time | t _r -t _f | - | 10 | μs | V _{CC} =5V, I _C =1mA, R _L =100Ω * This product is not designed to be protected against electromagnetic wave. | |
| | Maximum sensitivity wavelength | λ _P | - | 800 | nm | - | |

Electrical and optical characteristics curves

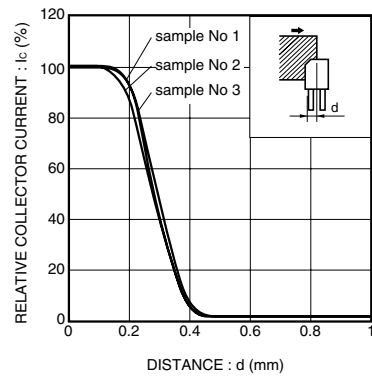


Fig.1 Relative output current vs. distance (I)

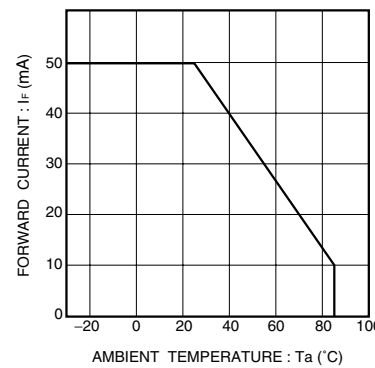


Fig.2 Forward current falloff

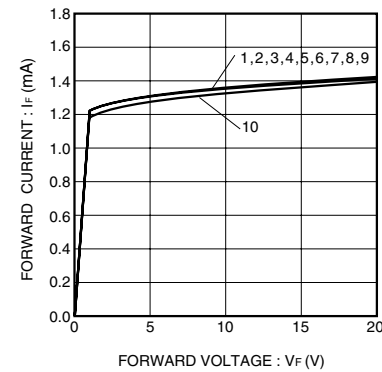


Fig.3 Forward current vs. forward voltage

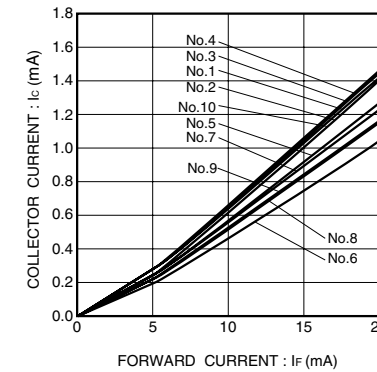


Fig.7 Collector current vs. forward current

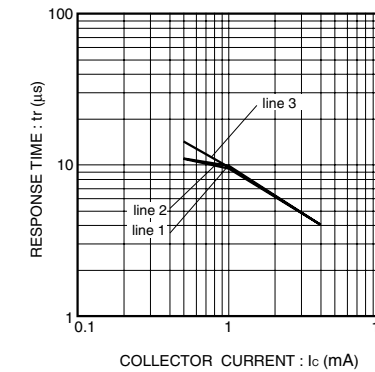


Fig.8 Response time vs. collector current (I)

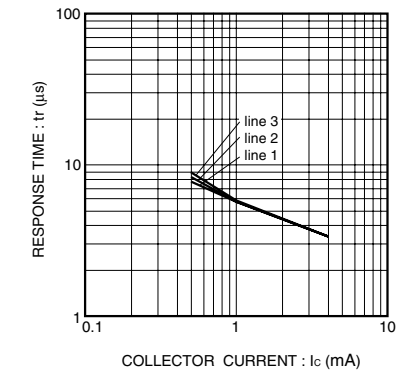


Fig.9 Response time vs. collector current (II)

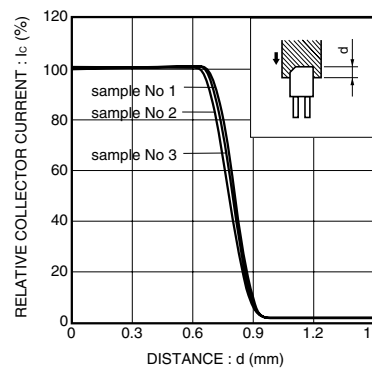


Fig.4 Relative output current vs. distance (II)

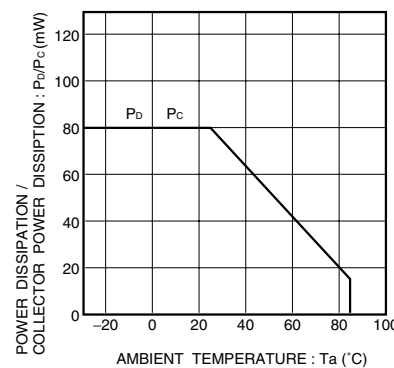


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

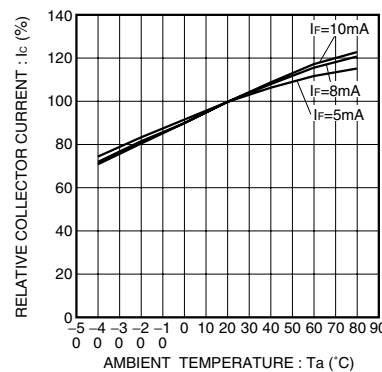


Fig.6 Relative output vs. ambient temperature

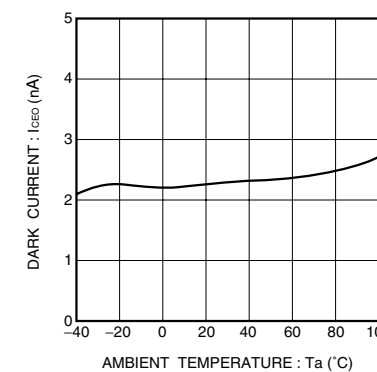


Fig.10 Dark current vs. ambient temperature

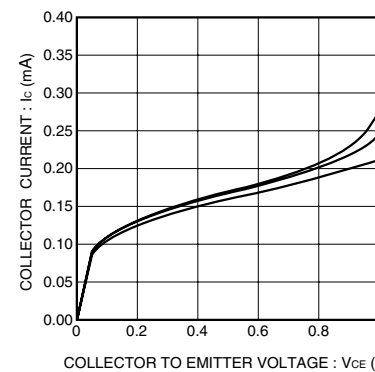
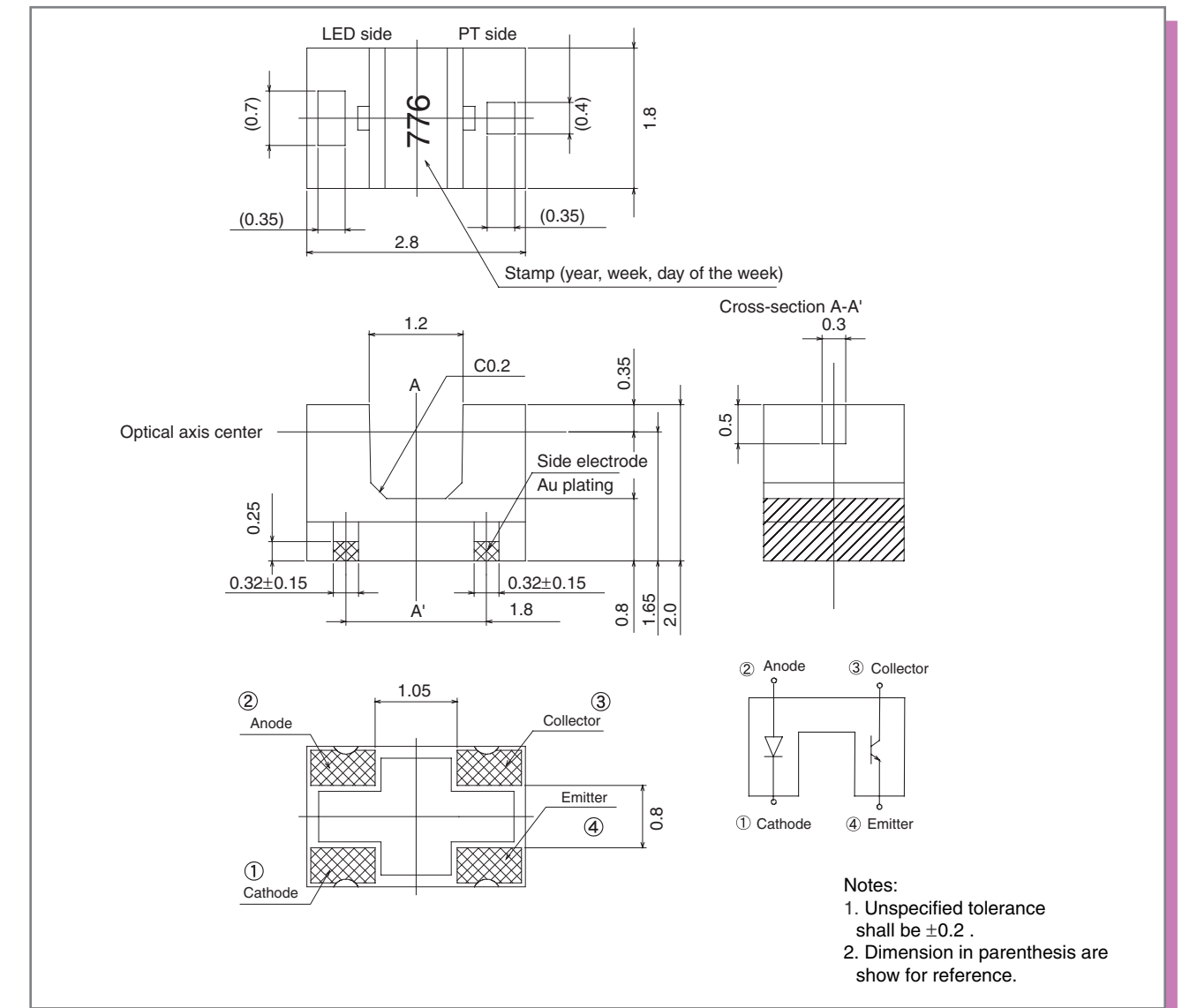


Fig.11 Output characteristics

Dimensions (Unit : mm)



- Notes:
1. Unspecified tolerance shall be ±0.2.
 2. Dimension in parenthesis are show for reference.

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