Photointerrupter, Ultraminiature SMD type

Absolute maximum ratings (Ta=25°C)

| | Parameter | Symbol | Limits | Unit |
|----------------------------------|-----------------------------|--------|------------|------|
| Input (LED) | Forward current | lF | 50 | mA |
| | Reverse voltage | VR | 5 | V |
| | Power dissipation | Po | 80 | mW |
| Output (photo- transistor) | Collector-emitter voltage | Vceo | 30 | V |
| | Emitter-collector voltage | Veco | 4.5 | V |
| | Collector current | Ic | 30 | mA |
| | Collector power dissipation | Pc | 80 | mW |
| Operating temperature | | Topr | -30 to +85 | °C |
| | Storage temperature | Tstg | -40 to +85 | °C |

Applications

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

Features

Electrical and optical characteristics (Ta=25°C)

| Parameter | | | Symbol | Min. | Тур. | Max. | Unit | Conditions |
|---------------------------------------|--------------------------------------|-----------|----------|------|------|------|------|--|
| Input charac- teristics | Forward voltage | | VF | - | 1.8 | 2.3 | ٧ | Ir=50mA |
| | Reverse current | | IR | - | - | 10 | μА | V _R =5V |
| Output charac- teristics | Dark current | | Iceo | - | - | 0.1 | μА | Vce=10V |
| | Peak sensitivity wavelength | | λь | - | 800 | - | nm | - |
| Transfer characteristics | Collector current | | Ic | 0.1 | - | - | mA | VcE=5V, Ir=5mA |
| | Collector-emitter saturation voltage | | VCE(sat) | - | - | 0.4 | ٧ | Ir=20mA, Ic=0.1mA |
| | Response time | Rise time | tr | - | 30 | 150 | μs | Vcc=5V, Ir=0.1mA, Rι=1000Ω |
| | | Fall time | tf | - | 30 | 150 | μs | |
| Infrared light emitter diode | Peak light emitting wavelength | | λρ | - | 850 | - | nm | Ir=50mA * Non-coherent Infrared light emitting diode used. |
| Photo transistor | Response time | | tr•tf | - | 50 | - | μs | $\label{eq:cc=5V} V_{cc=5V,\ lc=0.1mA,\ R\iota=1000\Omega}$ * This product is not designed to be protected against electromagnetic wave. |
| | Maximum sensitivity wavelength | | λь | - | 800 | - | nm | - |

Electrical and optical characteristics curves

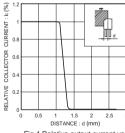


Fig.4 Relative output current vs. distance (II)

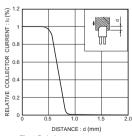


Fig.1 Relative output current vs. distance (I)

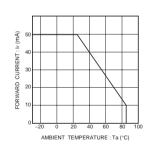


Fig.2 Forward current falloff

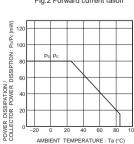


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

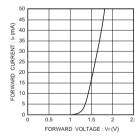


Fig.3 Forward current vs. forward

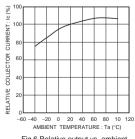
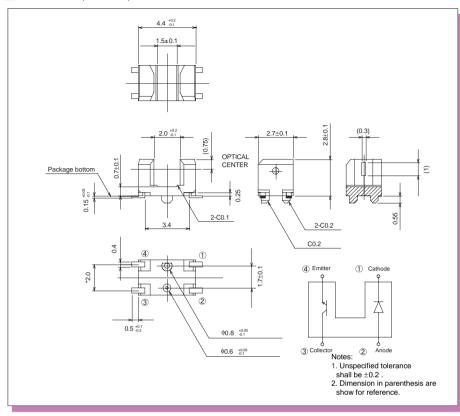
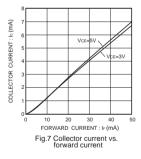


Fig.6 Relative output vs. ambient

Dimensions (Unit : mm)





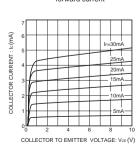


Fig.10 Output characteristics

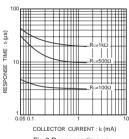


Fig.8 Response time vs.

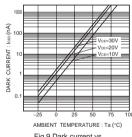
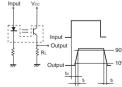


Fig.9 Dark current vs.



- td: Delay time
- tr: Rise time (time for output current to rise from 10% to 90% of peak current)
- tr : Fall time (time for output current to fall from 90% to 10% of peak current)

Fig.11 Response time measurement circuit

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