

Photo IC for optical switch



S11049-02SB

Analog output photo IC for optical switch

The S11049-02SB photo IC is designed for optical switches and provides an analog waveform output proportional to the intensity of incident pulsed light.

Features

- Large allowable background light level: 4000 lx Min.
- High linearity
- Low noise: 1.8 mV rms Max.

Applications

- Optical switch
- Optical receivers in various sensor devices

Absolute maximum ratings (Ta=25 °C)

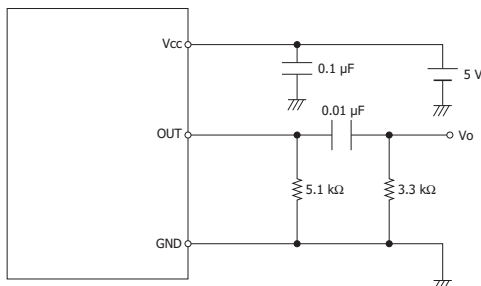
| Parameter | Symbol | Value | Unit |
|-----------------------|--------|-------------|------|
| Supply voltage | Vcc | -0.5 to +7 | V |
| Power dissipation *1 | P | 250 | mW |
| Output voltage | Vout | -0.5 to +7 | V |
| Operating temperature | Topr | -25 to +85 | °C |
| Storage temperature | Tstg | -40 to +100 | °C |
| Soldering | - | 230 °C, 5 s | - |

*1: Power dissipation decreases at a rate of 3.3 mW/°C above Ta=25 °C

Electrical and optical characteristics (Ta=25 °C, Vcc=5.0 V)

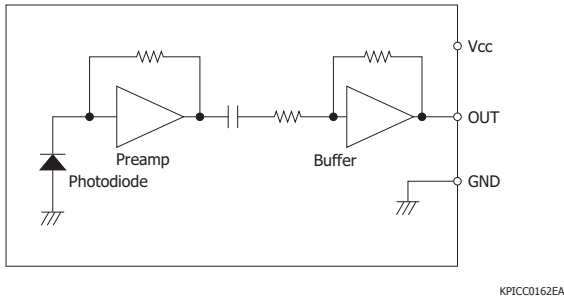
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--|-------------|---|------|-------------|------|--------|
| Spectral response range | λ | | - | 380 to 1120 | - | nm |
| Peak sensitivity wavelength | λ_p | | - | 760 | - | nm |
| Supply voltage | Vcc | | 4.5 | - | 5.5 | V |
| Current consumption | Icc | | - | - | 2.2 | mA |
| Photo sensitivity | A | $\lambda=950$ nm *2 Input signal=100 kHz Including diffused reflection inside package | 120 | | 300 | V/mW |
| AC photoelectric sensitivity linearity | Alin | Input pulse signal 0.01 μ W to 4.0 μ W *2 | -10 | - | +10 | % |
| | | Input pulse signal 4.0 μ W to 7.5 μ W *2 | -50 | - | +50 | |
| Cut-off frequency | Low band | *2 | - | - | 50 | kHz |
| | High band | | 1250 | - | 1650 | |
| Allowable background light level *3 | Pdc | Input pulse signal 2.5 μ W *2 | 4000 | - | - | lx |
| Output noise voltage (with no input) | VON | *2 | - | - | 1.8 | mV rms |

*2: Measurement circuit (Waveform at terminal Vo is measured)

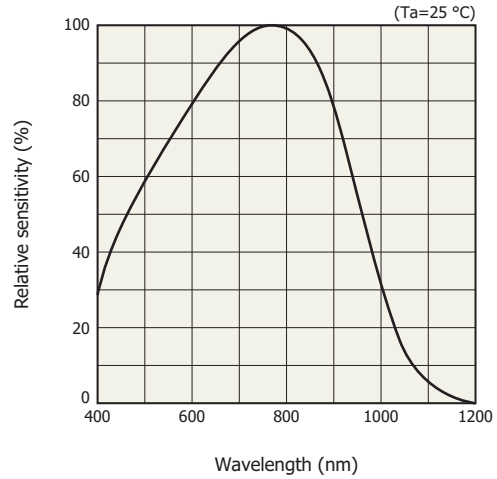


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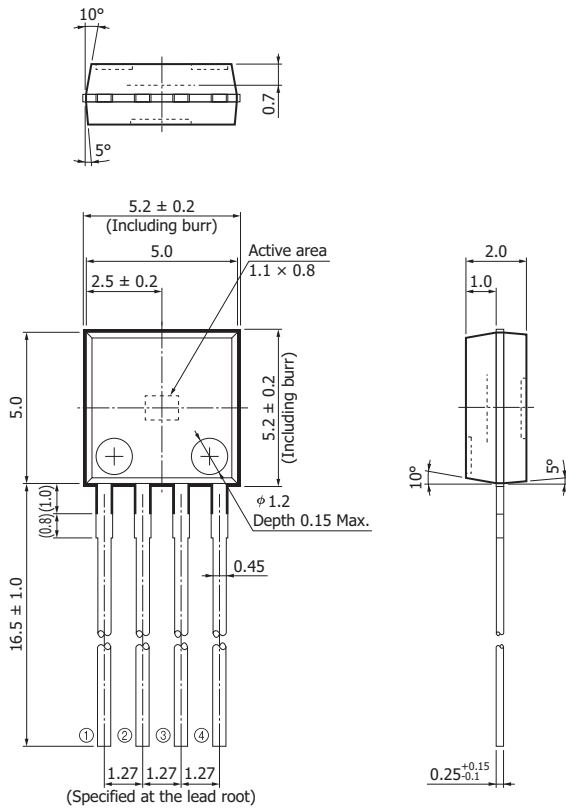
Block diagram



Spectral response (measurement example)



Dimensional outline (unit: mm)



- ① GND
 - ② Vout
 - ③ Vcc
 - ④ GND
- Tolerance unless otherwise noted: ± 0.1 , $\pm 2^\circ$
 Shaded area indicates burr.
 Values in parentheses are not guaranteed, but for reference.
 Lead surface finish: silver plating
 Packing: Polyethylene pack [anti-static type] (200 pcs/pack)

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