GP2Y1010AU

Features

- 1. Compact, thin type (46×30×17.6mm)
- 2. Low dissipation current (I_{CC}:MAX. 20mA)
- 3. Single-shot detection of house dust

Applications

- 1. Air conditioners
- 2. Air cleaner

Absolute Maximum Ratings $(T_a=25^{\circ}C)$ Parameter Symbol Rating Unit -0.3 to +7 V Supply voltage V_{CC} -0.3 to V_{CC} *1 VLED V Input terminal voltage Operating temperature Topr -10 to +65 °C °C Soldering temperature T_{sol} -20 to +80

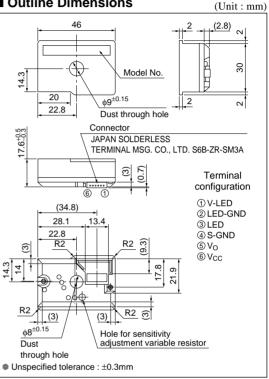
*1 Open drain drive input

Recommend Operating Conditions

| Parameter | Symbol | Rating | Unit |
|--------------------------|-----------------|--------|------|
| Operating Supply voltage | V _{CC} | 5±0.5 | V |

Compact Dust Sensor for Air Conditioners

Outline Dimensions



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Electro-optical Characteristics

| ■ Electro-optical Characteristics (T _a =25°C, V _a | | | | | °C, V _{CC} =5V) | |
|-------------------------------------------------------------------------|------------------|--------------------------|------|------|--------------------------|----------------------------|
| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
| Detecting sensitivity | K | *1 *2 *3 *4 | 0.35 | 0.5 | 0.65 | V/ (0.1mg/m ³) |
| Output voltage (no dust) | V _{OC} | *2 *3 *4 | 0 | 0.9 | 1.5 | V |
| Output voltage range | V _{OH} | *2 *3 *4 RL=4.7kΩ | 3.4 | - | - | V |
| LED terminal current | I _{LED} | *2 *3 *4 LED terminal=0V | - | 10 | 20 | mA |
| Dissipation current | I _{CC} | *2 *3 RL=∞ | - | 11 | 20 | mA |

*1 Dust density shall be measured the density of Mild seven by using a digital dust indicator. (P-5L2 made by SIBATA SCIENTIFIC TECHNOLOGY LTD.)

Sensitivity:K shall be specified about output voltage change when dust density is changed 0.1mg/m3

*2 Input condition for LED input terminal (pulse driving condition) is shown in Fig.1

*3 Refer to Fig.1

*4 Refer to Fig.2

Fig.1 Input Condition for LED Input Terminal

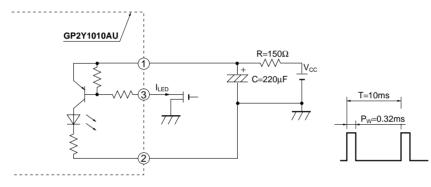
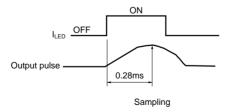


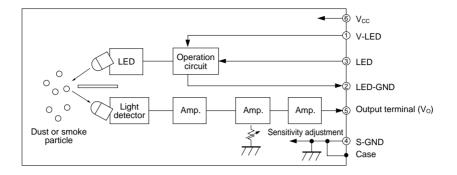
Fig.2 Sampling Timing of Output Pulse



■ Recommended Input Condition for LED Input Terminal

| Parameter | Symbol | Recommendation | Unit |
|-------------|--------|----------------|------|
| Pulse cycle | Т | 10±1 | ms |
| Pulse width | P_W | 0.32±0.02 | ms |

Fig.3 Internal Block Diagram



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