# **GP2Y1010AU**

#### Features

- 1. Compact, thin type (46×30×17.6mm)
- 2. Low dissipation current (I<sub>CC</sub>: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<sub>CC</sub> -0.3 to V<sub>CC</sub> \*1 VLED V Input terminal voltage Operating temperature Topr -10 to +65 °C °C Soldering temperature T<sub>sol</sub> -20 to +80

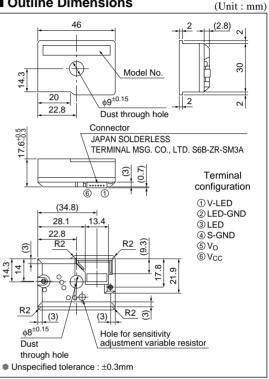
\*1 Open drain drive input

# Recommend Operating Conditions

Parameter	Symbol	Rating	Unit
Operating Supply voltage	V <sub>CC</sub>	5±0.5	V

# **Compact Dust Sensor** for Air Conditioners

## Outline Dimensions



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#### Electro-optical Characteristics

■ Electro-optical Characteristics (T <sub>a</sub> =25°C, V <sub>a</sub>					°C, V <sub>CC</sub> =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 <sup>3</sup> )
Output voltage (no dust)	V <sub>OC</sub>	*2 *3 *4	0	0.9	1.5	V
Output voltage range	V <sub>OH</sub>	*2 *3 *4 RL=4.7kΩ	3.4	-	-	V
LED terminal current	I <sub>LED</sub>	*2 *3 *4 LED terminal=0V	-	10	20	mA
Dissipation current	I <sub>CC</sub>	*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.)

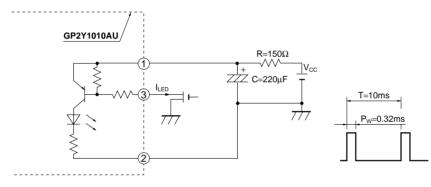
Sensitivity:K shall be specified about output voltage change when dust density is changed 0.1mg/m3

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

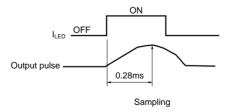
\*3 Refer to Fig.1

\*4 Refer to Fig.2

### Fig.1 Input Condition for LED Input Terminal



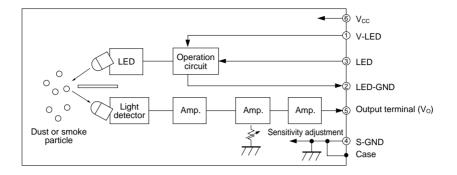
#### Fig.2 Sampling Timing of Output Pulse



# ■ 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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