SHARP GP2Y1001AU

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■ Features

- 1. Compact, thin type (58×38×20.7mm)
- 2. Low dissipation current (Icc:MAX. 20mA)
- 3. Single-shot detection of house dust

■ Applications

- 1. Air conditioners
- 2. Air cleaner

■ Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	Vcc	-0.3 to +15	V
*1 Input terminal voltage	VLED	−0.3 to Vcc	V
Operating temperature	Topr	-10 to +65	°C
Soldering temperature	Tsol	-20 to +80	°C

^{*1} Open drain drive input

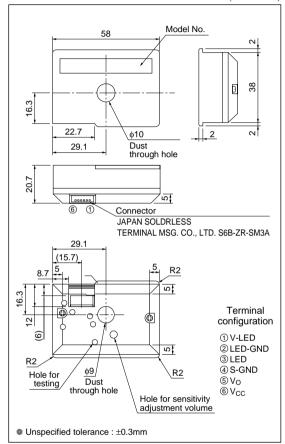
■ Recommend Operating Conditions

Parameter	Symbol	Rating	Unit
Operating Supply voltage	Vcc	12±1.8	V

Compact Dust Sensor for Air Conditioners

■ Outline Dimensions

(Unit: mm)



■ Electro-optical Characteristics

-	Ta=25	\circ C	Vcc-	1277
(1 a=25	٦٠.	vcc=.	1 Z V

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Detecting sensitivity	K	*1 *2 *3 *4	0.84	1.2	1.56	V/ (0.1mg/m ³)
Output voltage (no dust)	Voc	*2 *3 *4	0	1.2	2.5	V
Output voltage range	Voh	*2 *3 *4 R _L =4.7kΩ	10.2	_	_	V
LED terminal current	ILED	*2 *3 *4 LED terminal=0V	_	13	20	mA
Dissipation current	Icc	*2 *3 R _L =∞	_	13	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.)

Fig.1 Input Condition for LED Input Terminal

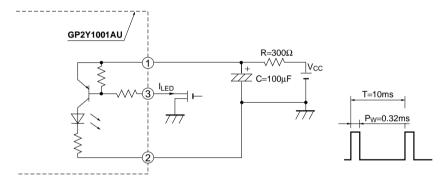
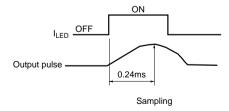


Fig.2 Sampling Timing of Output Pulse



■ Recommended Input Condition for LED Input Terminal

Parameter	Symbol	Recommendation	Unit
Pulse cycle	T	10±1	ms
Pulse width	Pw	0.32±0.02	ms

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.3 Internal Block Diagram

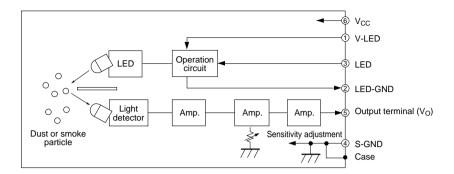
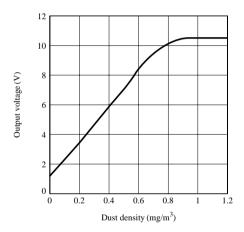


Fig.4 Output Voltage vs. Dust Density



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