

## GP2U06

## High Sensitivity Dust Sensor

Compact and Thin Type Dust Sensor for Detecting Particles

### General Description

Sharp's **GP2U06** is dust sensor which integrated optical sensor portion and signal amplifier portion. It is suitable for indoor air purifier sensor because of compact, thin, low dissipation current type.

### Features

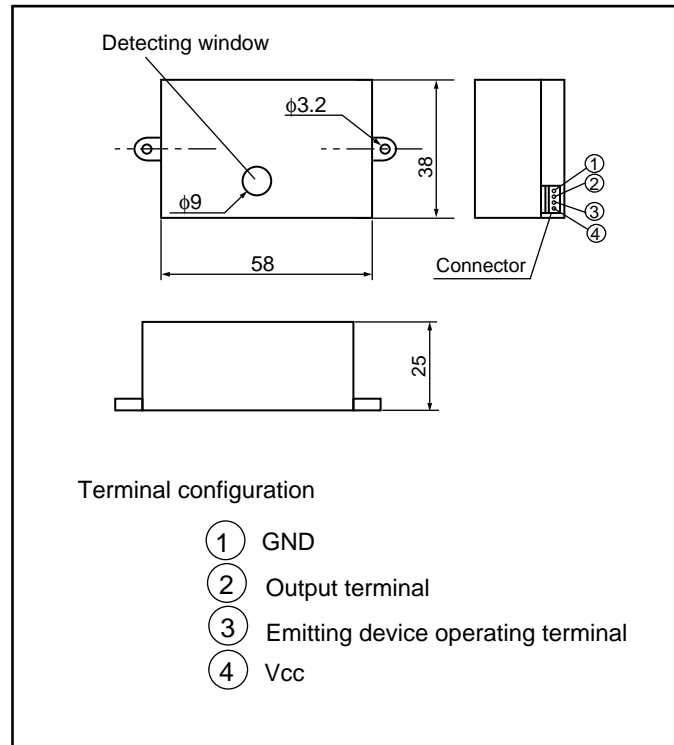
- (1) Compact, thin type (58 x 38 x 25mm)
- (2) High sensitivity  
(Dust detecting sensitivity : TYP.0.5V/(0.1mg/m<sup>3</sup>))
- (3) Can detect dust even in low density area  
(Minimum particle density : TYP. 0.02mg/m<sup>3</sup>)
- (4) Operating voltage : 5V
- (5) Low dissipation current (I<sub>cc</sub> : MAX. 15mA)

### Applications

- (1) Air purifiers
- (2) Air conditioners

### Outline Dimensions

(Unit : mm)



### Absolute Maximum Ratings

(T<sub>a</sub>=25°C)

Parameter	Symbol	Ratings	Unit	Remarks
Supply voltage	V <sub>cc</sub>	-0.3 to +7	V	-
Input terminal voltage	V <sub>LED</sub>	-0.3 to +V <sub>cc</sub>	V	Open drain input
Operating temperature	T <sub>opr</sub>	-10 to +65	°C	-
Storage temperature	T <sub>stg</sub>	-20 to +80	°C	-

Operating supply voltage

Symbol	Ratings	Unit	Remarks
V <sub>cc</sub>	5±0.5	V	-

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• Specifications are subject to change without notice for improvement.

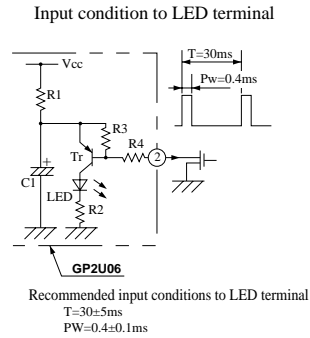
(Internet) • Data for SHARP's optoelectronic/power device is provided on internet. (Address <http://www.sharp.co.jp/ecg/>)

### Electro-optical Characteristics

( $T_a=25^\circ\text{C}$ ,  $V_{CC}=5\text{V}$ )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Detecting sensitivity	K	*1, 2	0.35	0.5	0.65	V/(0.1mg/m <sup>3</sup> )
Output voltage (no dust)	$V_{OC}$	*2	0	0.5	1.0	V
Range of output voltage	$V_{OH}$	$R_L=4.7\text{k}\Omega$	3.2	-	-	V
LED operating current	$I_{LED}$	LED terminal=0V *2	-	15	20	mA
Dissipation current	$I_{CC}$	$R_L=\infty$ *2	-	10	15	mA

- \*1 • Dust density is measured by mildseven smoke density, using digital dust meter [P-5L2 made by SHIBATA scientific instrumental industry].
- Detecting sensitivity is settled according to the change of output voltage when dust density change 0.1mg/m<sup>3</sup> from the initial value.
- \*2 Input conditions to LED terminal (pulse operation condition) is shown in the right figure.



### Block Diagram

