

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

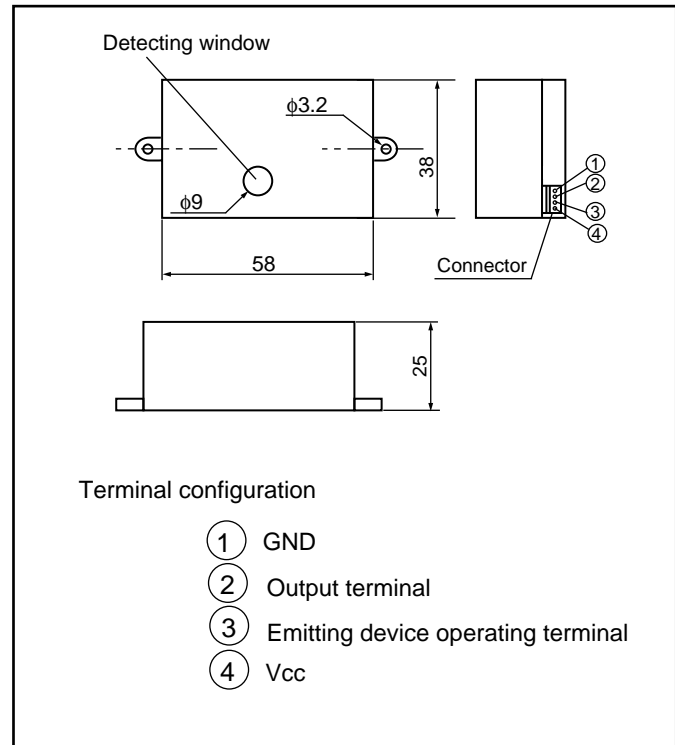
- (1) Compact, thin type (58 x 38 x 25mm)
- (2) High sensitivity
(Dust detecting sensitivity : TYP.0.5V/(0.1mg/m³))
- (3) Can detect dust even in low density area
(Minimum particle density : TYP. 0.02mg/m³)
- (4) Operating voltage : 5V
- (5) Low dissipation current (I_{cc} : MAX. 15mA)

Applications

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

Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

(T_a=25°C)

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

Operating supply voltage

| Symbol | Ratings | Unit | Remarks |
|-----------------|---------|------|---------|
| V _{cc} | 5±0.5 | V | - |

(Notice) • In the absence of device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP device shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.
• Specifications are subject to change without notice for improvement.

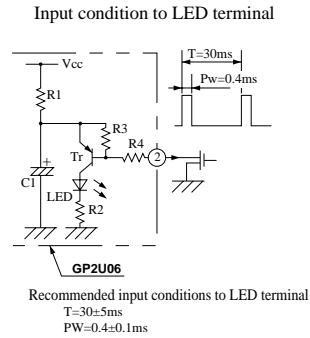
(Internet) • Data for SHARP's optoelectronic/power device is provided on internet. (Address <http://www.sharp.co.jp/ecg/>)

Electro-optical Characteristics

(Ta=25°C, Vcc=5V)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|--------------------------|------------------|--------------------|------|------|------|---------------------------|
| Detecting sensitivity | K | *1, 2 | 0.35 | 0.5 | 0.65 | V/(0.1mg/m ³) |
| Output voltage (no dust) | V _{OC} | *2 | 0 | 0.5 | 1.0 | V |
| Range of output voltage | V _{OH} | RL=4.7kΩ | 3.2 | - | - | V |
| LED operating current | I _{LED} | LED terminal=0V *2 | - | 15 | 20 | mA |
| Dissipation current | I _{CC} | RL=∞ *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/m³ from the initial value.
- *2 Input conditions to LED terminal (pulse operation condition) is shown in the right figure.



Block Diagram

