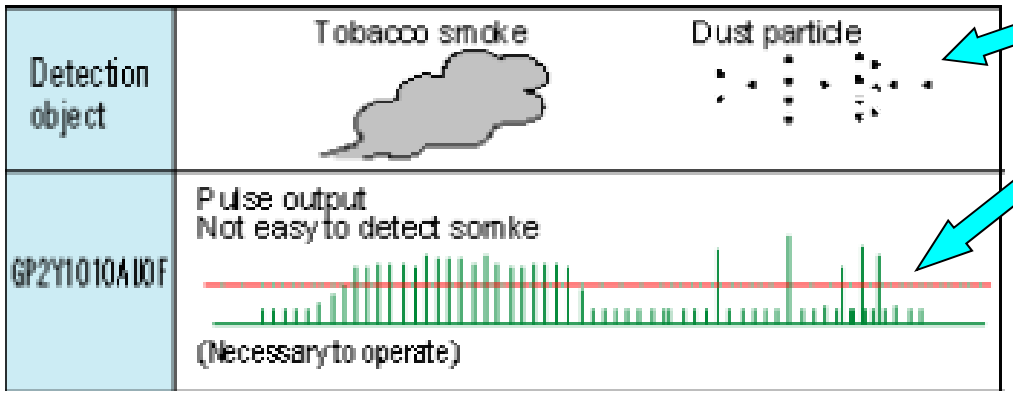
Dust sensor (Proposal)　GP2Y1010AU0F

Application :

Detection of dispersal toner around drum of the copier

⇨ Display copier maintenance mode

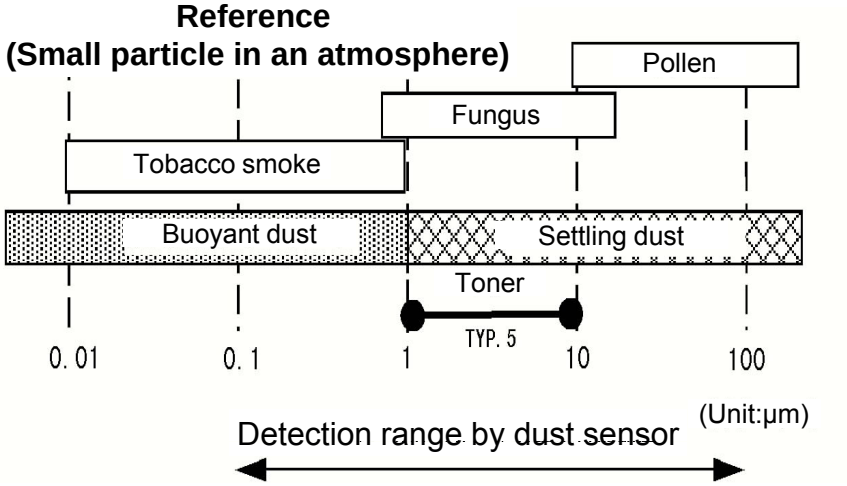
Comparison of detection method



Particle dust
[Dispersal toner]

⇩

Pulsed output voltage



Dust Sensor Unit *[GP2Y1010AU0F]*

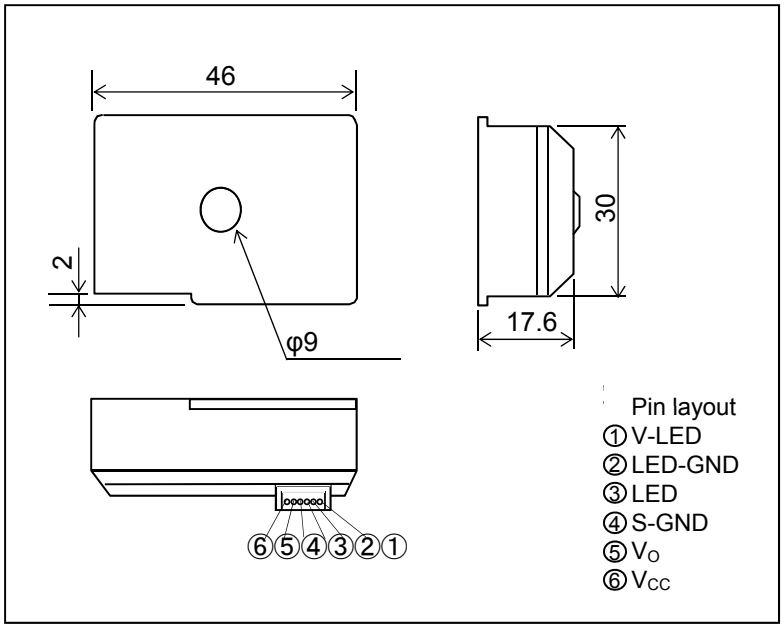
Features

- Compact type
  (Compare to conventional model:47% reduction)
- Response to Operating supply voltage 5V
- Possible to detect sporadic cigarette smoke,
  house dust and toner
- Possible to distinguish cigarette smoke from house dust

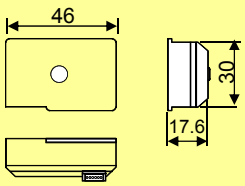
Applications

- Air Cleaner
- Air-conditioner
- Copier
- Printer
  (Laser Beam Printer)

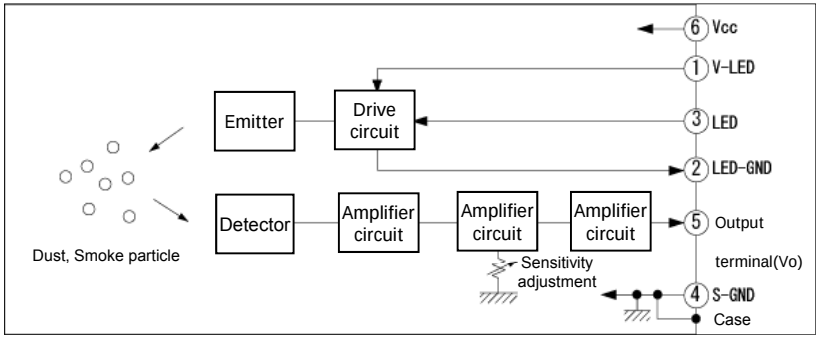
Outline Dimensions



Compare to Conventional Model

Model No.	GP2Y1010AU0F
Supply voltage	5 V
Detection sensitivity	0.5 V/(mg/m3)
Power consumption	TYP 55 mW
Dimension	46 × 30 × 17.6 mm
Outline drawing	

Block Diagram

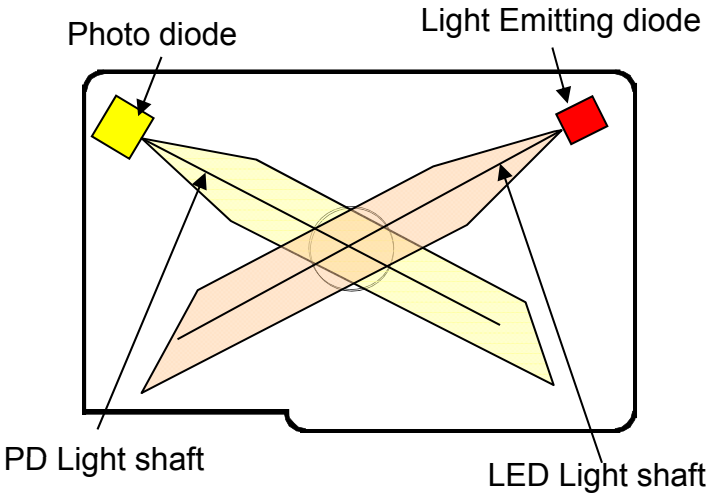


Specifications

Parameter	Symbol	Characteristics
Operating supply voltage	V_{CC}	5V±0.5V
Smoke detection sensitivity	K	TYP 0.5 V/(0.1 mg/m³)±30 %
Output voltage at no dust	V_{OC}	MAX 1.2 V
Output voltage range	V_{OH}	MIN 3.4 V
Driving current for emitter	I_{LED}	MAX 20 mA
Current consumption	I_{CC}	MAX 20 mA

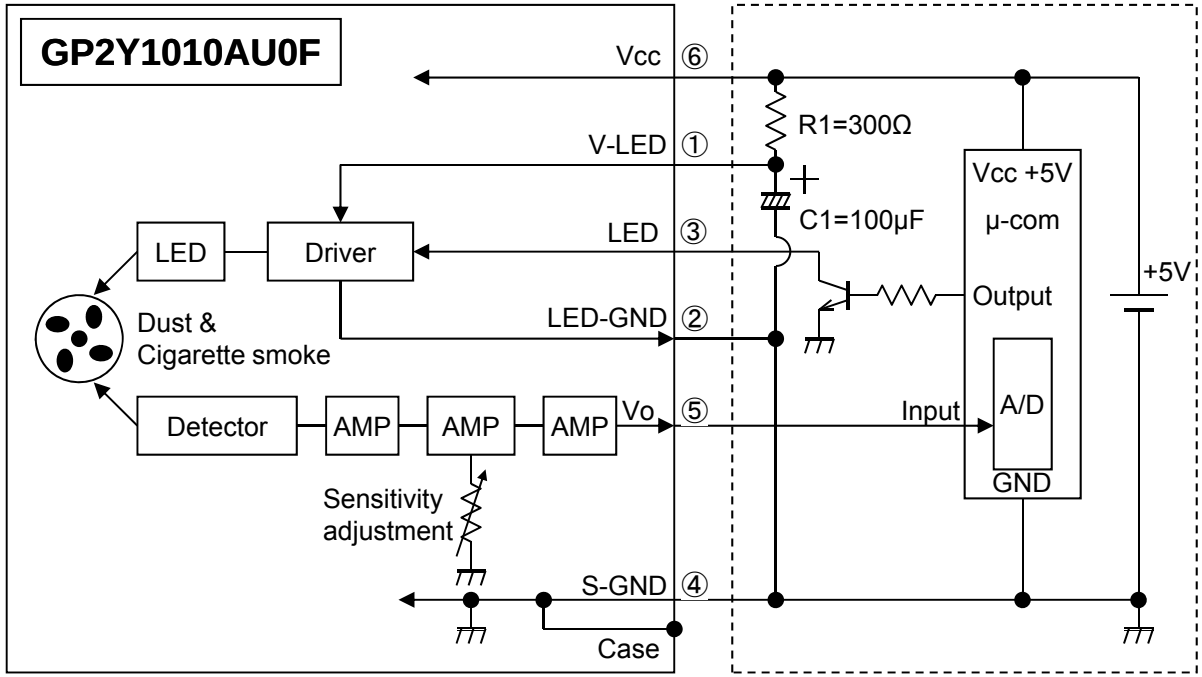
Application of Dust Sensor Unit

•Structure



•The point where LED light shaft intersects PD light shaft is detection region.
•If there are airborne particles like tobacco smoke or house dust in the detection region,
→Light reflected from these particles is directed to light-receiving element.

•Example of system connection



•Output pulse