

GP2D150A

General Purpose Distance Measuring Sensor

■ Features

1. Less influence on the color and reflectivity of reflective objects, due to optical triangle measuring method
2. Distance judgement type
Judgement distance:15cm (Detection range:3 to 30cm)
3. External control circuit is unnecessary
Output can be directly connected to microcomputers
4. Low cost

■ Applications

1. Detection of objects such as home appliances and OA equipment, detection of human body

■ Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|----------------------------|------------------|------------------------------|------|
| Supply voltage | V _{CC} | -0.3 to +7 | V |
| *1 Output terminal voltage | V _O | -0.3 to V _{CC} +0.3 | V |
| Operating temperature | T _{opr} | -10 to +60 | °C |
| Storage temperature | T _{stg} | -40 to +70 | °C |

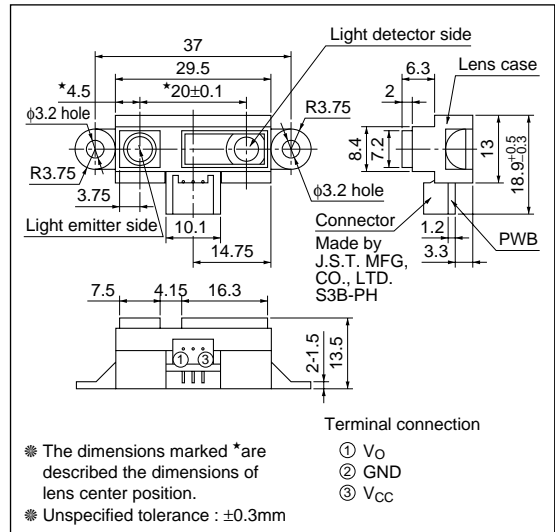
*1 Open collector output

■ Recommended Operating Conditions

| Parameter | Symbol | Rating | Unit |
|--------------------------|-----------------|------------|------|
| Operating Supply voltage | V _{CC} | 4.5 to 5.5 | V |

■ Outline Dimensions

(Unit : mm)



■ Electro-optical Characteristics

(Ta=25°C, Vcc=5V)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|------------------------------------|------------|---------------------------------|----------------|------|------|------|
| Distance measuring range | ΔL | *2 *4 | 3 | — | 30 | cm |
| Output terminal voltage | V_{OH} | *2 Output voltage at high level | $V_{CC} - 0.3$ | — | — | V |
| | V_{OL} | *2 Output voltage at low level | — | — | 0.6 | V |
| Distance characteristics of output | V_O | *2 *3 *5 | 12.5 | 15 | 17.5 | cm |
| Average dissipation current | I_{CC} | — | — | 33 | 50 | mA |

Note) L:Distance to reflective object

*2 Using reflective object:White paper (Made by Kodak Co. Ltd. gray cards R-27 · white face, reflective ratio:90%)

*3 We ship the device after the following adjustment:Output switching distance $L=15\text{cm} \pm 2.5\text{cm}$ must be measured by the sensor

*4 Distance measuring range of the optical sensor system

*5 Output switching has a hysteresis width. The distance specified by V_O should be the one with which the output L switches to the output H

Fig.1 Internal Block Diagram

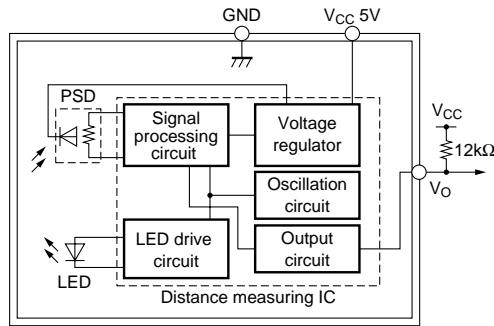


Fig.2 Timing Chart

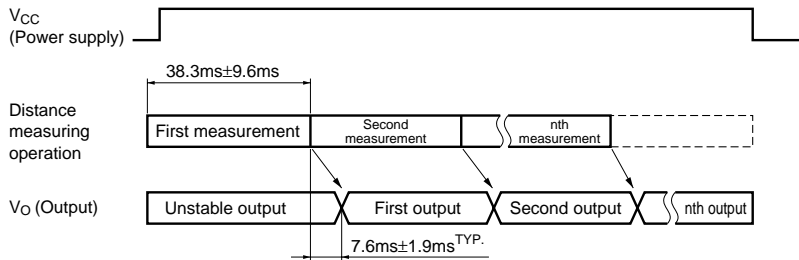
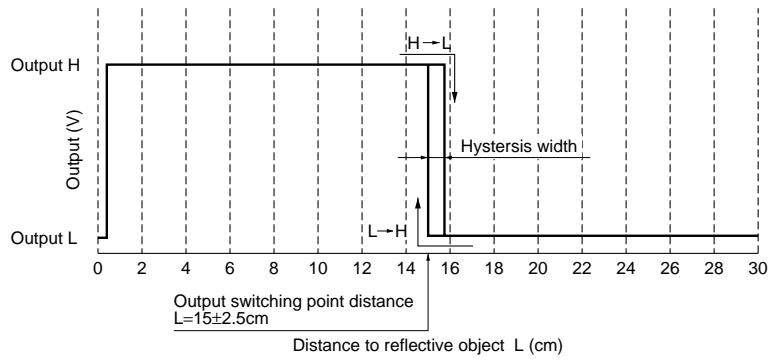


Fig.3 Distance Characteristics



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