

# GP2Y0A02YK

## Long Distance Measuring Sensor

### ■ Features

1. Less influence on the colors of reflected objects and their reflectivity, due to optical triangle measuring method
2. Distance output type  
(Detection range:20 to 150cm)
3. An external control circuit is not necessary  
Output can be connected directly to a microcomputer

### ■ Applications

1. For detection of human body and various types of objects in home appliances, OA equipment, etc

### ■ Absolute Maximum Ratings (T<sub>a</sub>=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	-0.3 to +7	V
*1 Output terminal voltage	V <sub>O</sub>	-0.3 to V <sub>CC</sub> +0.3	V
Operating temperature	T <sub>opr</sub>	-10 to +60	°C
Storage temperature	T <sub>stg</sub>	-40 to +70	°C

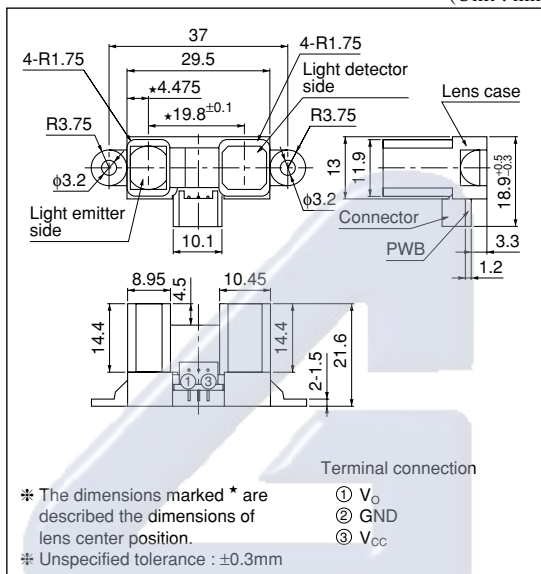
\*1 Open collector output

### ■ Recommended Operating Conditions

Parameter	Symbol	Rating	Unit
Operating Supply voltage	V <sub>CC</sub>	4.5 to 5.5	V

### ■ Outline Dimensions

(Unit : mm)



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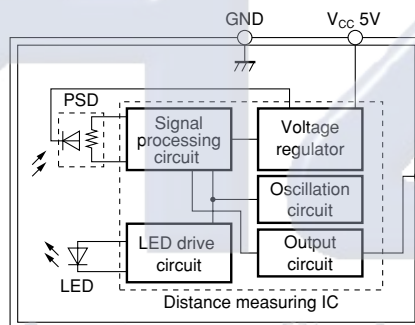
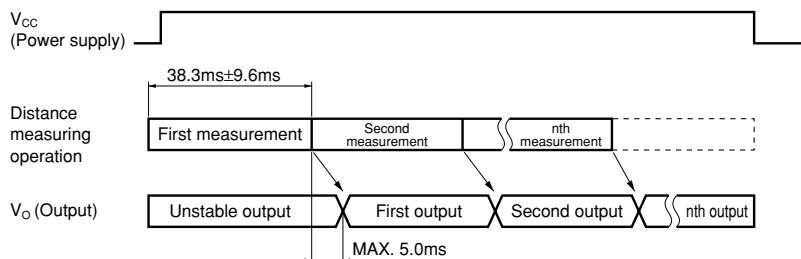
**SHARP****GP2Y0A02YK****■ Electro-optical Characteristics**(T<sub>a</sub>=25°C, V<sub>CC</sub>=5V)

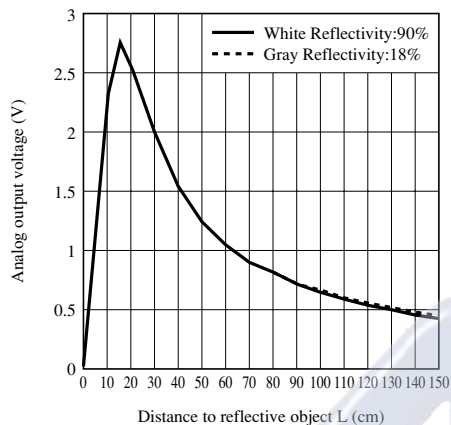
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Distance measuring range	$\Delta L$	*2 *3	20	—	150	cm
Output terminal voltage	V <sub>O</sub>	*2 L=150cm	0.25	0.4	0.55	V
Difference of output voltage	$\Delta V_O$	*2 Output change at L=150cm to 20cm	1.8	2.05	2.3	V
Average dissipation current	I <sub>CC</sub>	—	—	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 Distance measuring range of the optical sensor system

**Fig.1 Internal Block Diagram****Fig.2 Timing Chart**

**SHARP****GP2Y0A02YK****Fig.3 Analog Output Voltage vs. Distance to Reflective Object***Electrónica S.A. de C.V.*

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