

# 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 ( $T_a=25^\circ\text{C}$ )

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	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +70	$^\circ\text{C}$

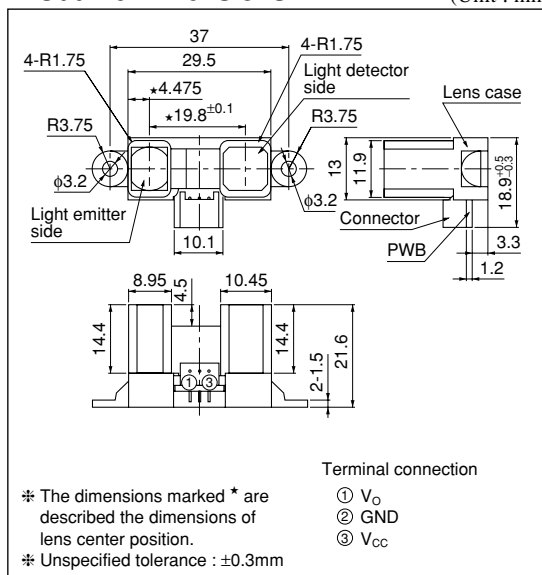
\*1 Open collector output

### ■ 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

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Distance measuring range	$\Delta L$	<sup>*2</sup> <sup>*3</sup>	20	—	150	cm
Output terminal voltage	$V_O$	<sup>*2</sup> $L=150\text{cm}$	0.25	0.4	0.55	V
Difference of output voltage	$\Delta V_O$	<sup>*2</sup> Output change at $L=150\text{cm}$ to $20\text{cm}$	1.8	2.05	2.3	V
Average dissipation current	$I_{CC}$	—	—	33	50	mA

Note) L: Distance to reflective object

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

<sup>\*3</sup> Distance measuring range of the optical sensor system

Fig.1 Internal Block Diagram

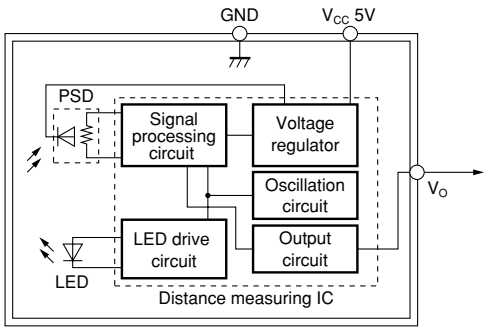
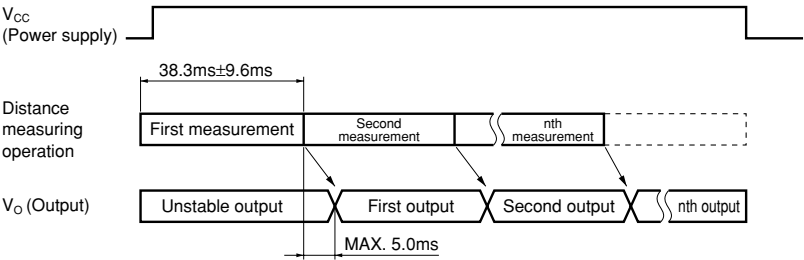
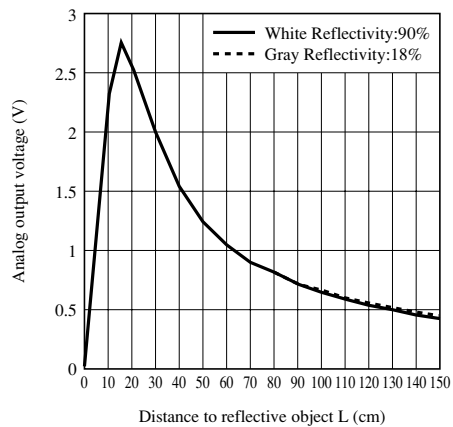


Fig.2 Timing Chart



**Fig.3 Analog Output Voltage vs. Distance to Reflective Object**



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