

# GP2Y0A21YK/ GP2Y0D21YK

## ■ Features

1. Less influence on the color of reflective objects, reflectivity
2. Line-up of distance output/distance judgement type  
Distance output type (analog voltage) : **GP2Y0A21YK**  
Detecting distance : 10 to 80cm  
Distance judgement type : **GP2Y0D21YK**  
Judgement distance : 24cm  
(Adjustable within the range of 10 to 80cm [Optionally available])
3. External control circuit is unnecessary
4. Low cost

## ■ Applications

1. TVs
2. Personal computers
3. Cars
4. Copiers

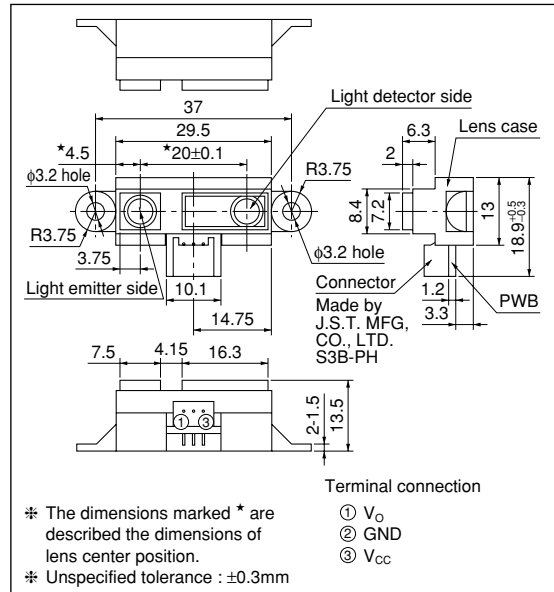
## ■ Absolute Maximum Ratings (T<sub>a</sub>=25°C, V<sub>CC</sub>=5V)

Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	-0.3 to +7	V
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

## General Purpose Type Distance Measuring Sensors

## ■ Outline Dimensions

(Unit : mm)



■ Recommended Operating Conditions

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

■ Electro-optical Characteristics

(T<sub>a</sub>=25°C, V<sub>CC</sub>=5V)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Distance measuring range	ΔL	*1 *3	10	—	80	cm	
Output terminal voltage	GP2Y0A21YK	V <sub>O</sub>	L=80cm *1	0.25	0.4	0.55	V
	GP2Y0D21YK	V <sub>OH</sub>	Output voltage at High *1	V <sub>CC</sub> -0.3	—	—	V
	GP2Y0D21YK	V <sub>OL</sub>	Output voltage at Low *1	—	—	0.6	V
Difference of output voltage	GP2Y0A21YK	ΔV <sub>O</sub>	Output change at L=80cm to 10cm *1	1.65	1.9	2.15	V
Distance characteristics of output	GP2Y0A21YK	V <sub>O</sub>	*1 *4 *2	21	24	27	cm
	GP2Y0D21YK	V <sub>O</sub>	*1 *4 *2	21	24	27	cm
Average Dissipation current	I <sub>CC</sub>	L=80cm *1	—	30	40	mA	

Note) L : Distance to reflective object

\*1 Using reflective object : White paper (Made by Kodak Co. Ltd. gray cards R-27 · white face, reflective ratio ; 90%)

\*2 We ship the device after the following adjustment : Output switching distance L=24cm±3cm must be measured by the sensor

\*3 Distance measuring range of the optical sensor system

\*4 Output switching has a hysteresis width. The distance specified by V<sub>O</sub> should be the one with which the output L switches to the output H

Fig.1 Internal Block Diagram

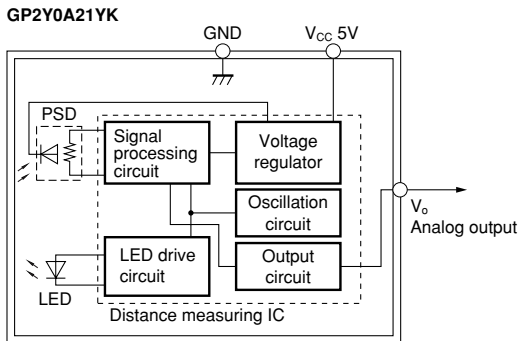


Fig.2 Internal Block Diagram

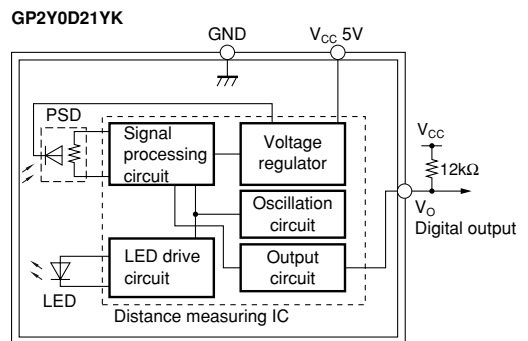


Fig.3 Timing Chart

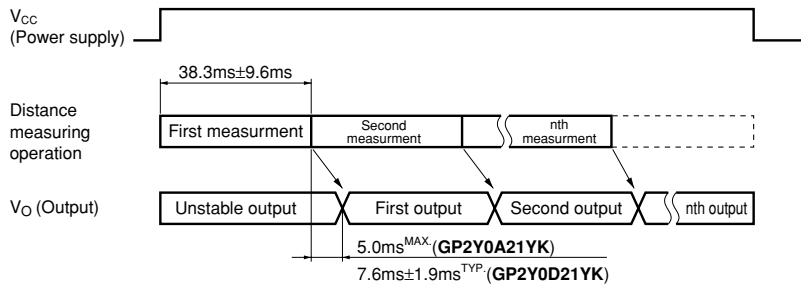


Fig.4 Distance Characteristics

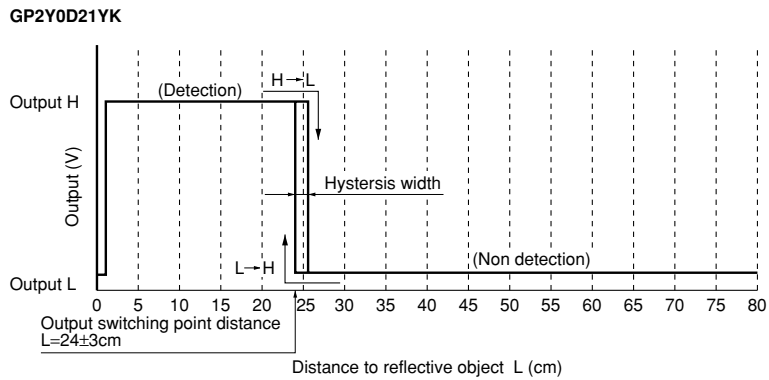
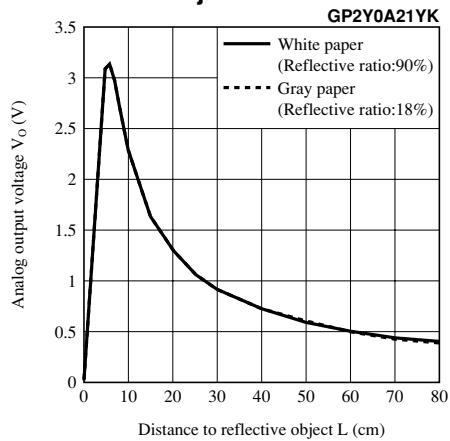


Fig.5 Analog Output Voltage vs. Distance to Reflective Object



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