

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

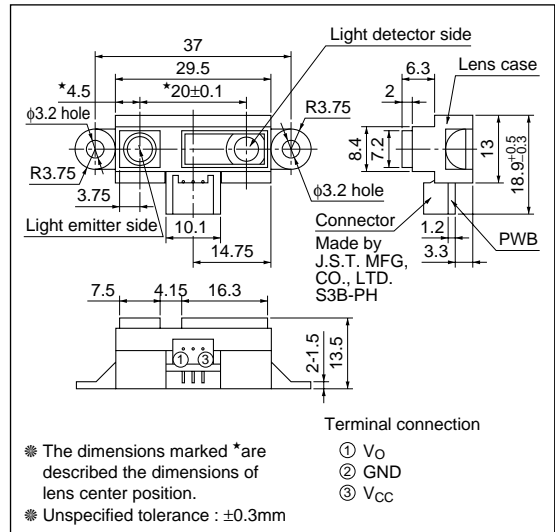
*1 Open collector output

■ 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

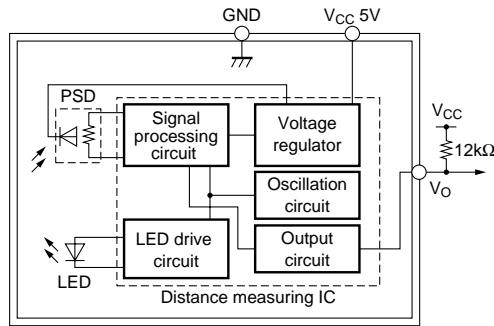


Fig.2 Timing Chart

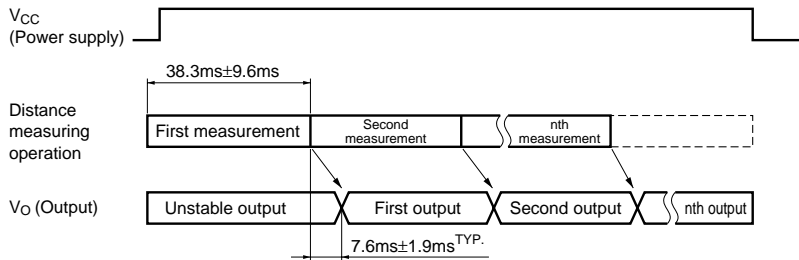
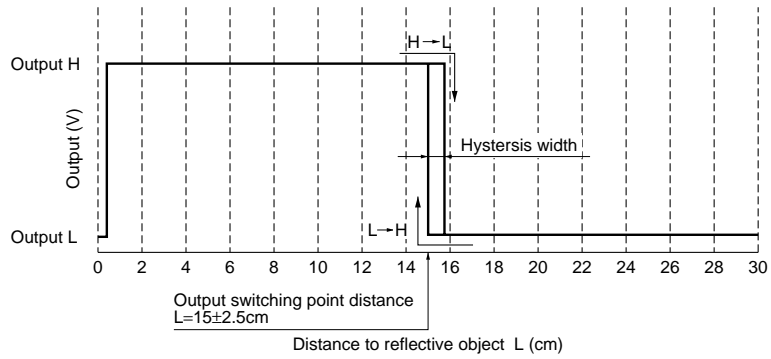


Fig.3 Distance Characteristics



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