

GP2Y0D02YK

Distance Measuring Sensor

Long Distance Measuring Sensor Unit

General Description

The **GP2Y0D02YK** is a standard type distance measuring sensor (long distance type) in which a PSD(*), an infrared emitting diode and a signal processing circuit are integrated.

This sensor is resistant to the effects of colors in reflected objects, reflectivity and ambient brightness, and it can measure distances with high accuracy.

*PSD: Position Sensitive Detector

Features

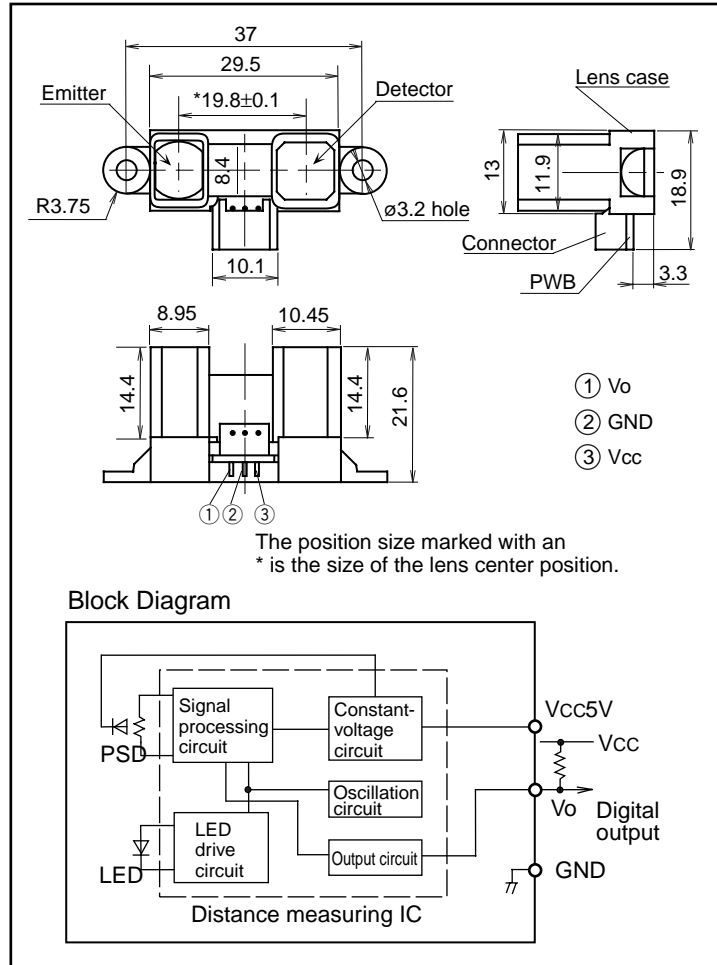
- (1) Less influence on the colors of reflected objects and their reflectivity.
- (2) Distance judgement type
Maximum measurable distance: 80cm
(Detection range: 20 to 150cm)
- (3) An external control circuit is not necessary.
Output can be connected directly to a microcomputer.

Applications

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

Outline Dimensions

(Unit: mm)



Absolute Maximum Ratings

(Ta=25°C, Vcc=5V)

Parameter	Symbol	Rating	Uni	Remarks
Supply voltage	VCC	-0.3 to +7	V	-
Output terminal voltage	VO	-0.3 to VCC +0.3	V	Open collector output
Operating temperature	Topr	-10 to +60	°C	-
Storage temperature	Tstg	-40 to +70	°C	-

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(Internet) • Data for Sharp's optoelectronic/power devices is provided on internet. (Address <http://www.sharp.co.jp/ecg/>)

■ Operating Supply Voltage

Symbol	Rating	Unit	Remarks
V _{CC}	4.5 to 5.5	V	–

■ Electro-optical Characteristics

(T_a=25°C, V_{CC}=5V)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Measuring range	ΔL	(*1) (*3)	20	–	150	cm
Output terminal voltage	V _{OH}	Output voltage when High (*1)	V _{CC} -0.3	–	–	V
	V _{OL}	Output voltage when Low (*1)	–	–	0.6	V
Distance-output characteristics	V _O	(*1) (*2) (*4)	70	80	90	cm
Average dissipation current	I _{CC}	–	–	33	50	mA

L: Distance to a reflective object

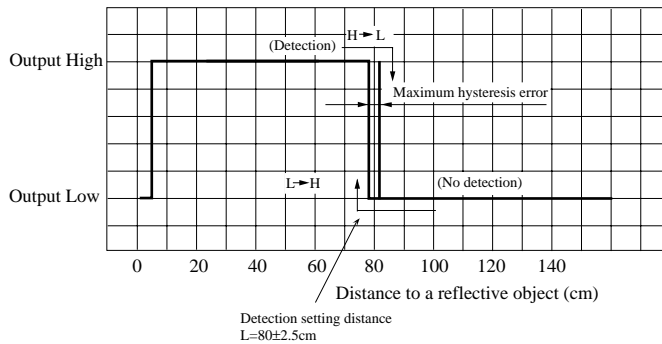
*1 Type of reflective object: White paper (Gray chart R-27 made by Kodak, white surface, reflectance: 90%)

*2 Output switching distance is set at L = 80cm±10cm by a sensor.

*3 Range of measurable distances (Range of measurable distances of the optical system sensor)

*4 The output switching has a maximum hysteresis error. The distance characteristics specified by V_O should be the distance at which the device switches from non-detecting area (output L) to detecting area (output H).

■ Output Voltage and Distance Characteristics



■ Output Timing Chart

