

GP2Y0D815Z0F

Distance Measuring Sensor Unit
Digital output (150 mm) type



■Description

GP2Y0D815Z0F is distance measuring sensor unit, composed of an integrated combination of PSD (position sensitive detector), IRED (infrared emitting diode) and signal processing circuit.

The variety of the reflectivity of the object, the environmental temperature and the operating duration are not influenced easily to the distance detection because of adopting the triangulation method.

The output voltage of this sensor stays high in case an object exists in the specified distance range. So this sensor can also be used as proximity sensor.

■Features

1. Digital output type
2. Short distance type
Detecting distance : Typ. 150 mm
3. Low profile
Package size : 13.6×7×7.95 mm
4. Consumption current : Typ. 5 mA
5. Battery drive compatible
Supply voltage : 2.7 to 6.2 V
6. Sunlight tolerance
7. Add Vin terminal, and an external transistor of Vcc line is unnecessary at intermittent operating.

■Agency approvals/Compliance

1. Compliant with RoHS directive (2002/95/EC)

■Applications

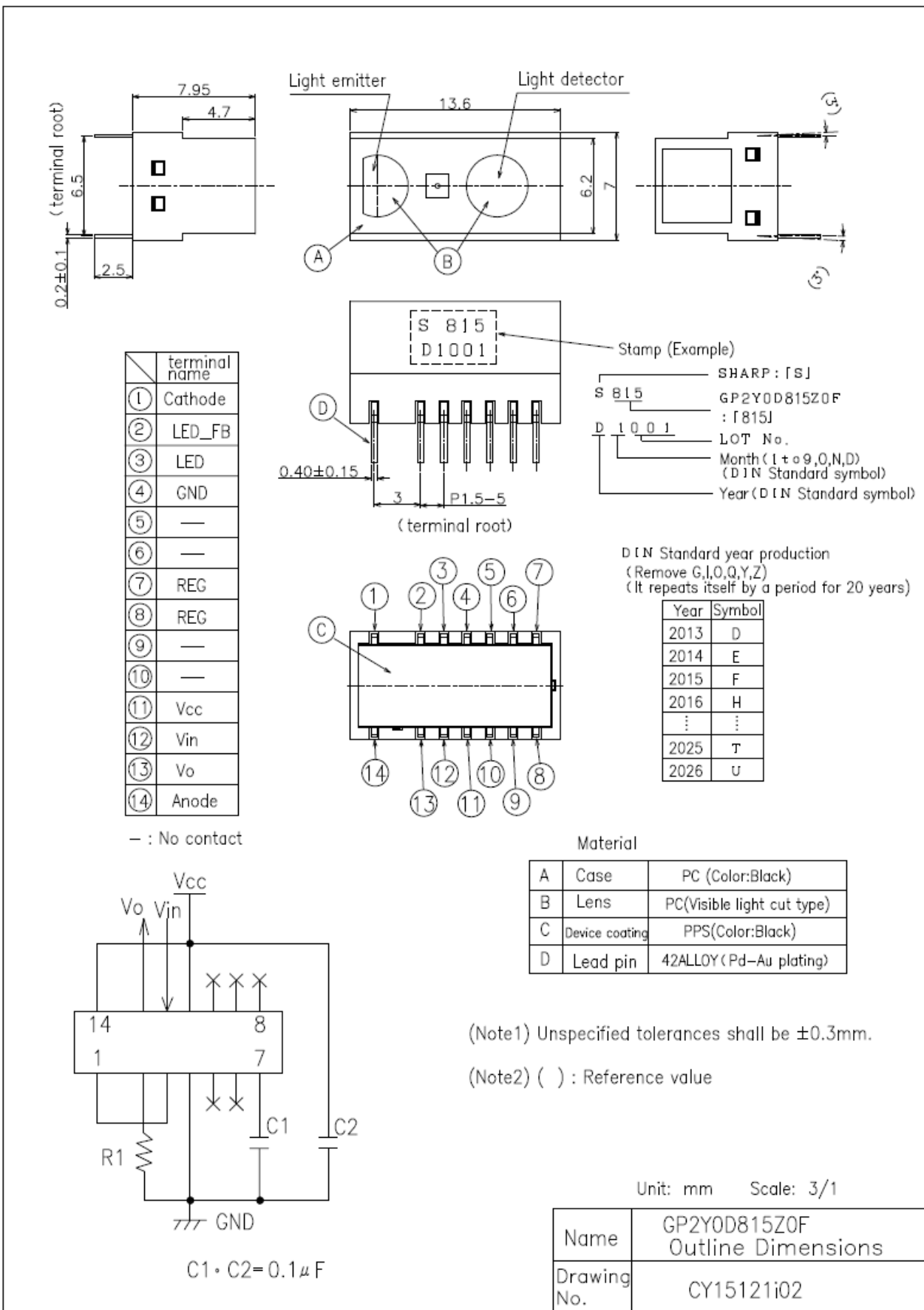
1. Touch-less switch
(Sanitary equipment, Control of illumination, etc.)
2. Robot cleaner

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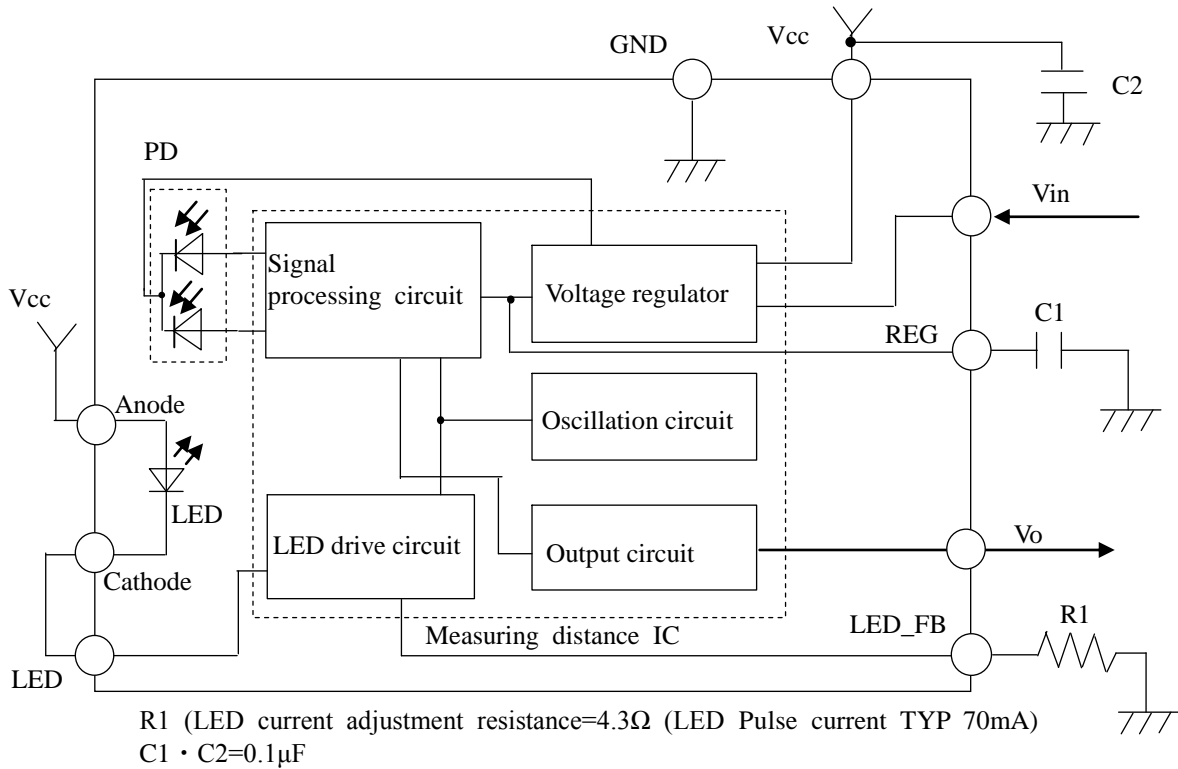
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Sheet No.: OP14005EN

■Outline



■ Schematic



■ Absolute maximum ratings

Parameter	Symbol	Ratings	Unit	Remark
Supply voltage	Vcc	-0.3 to +7	V	-
Output terminal voltage	Vo	-0.3 to Vcc+0.3	V	-
Input terminal voltage	Vin	-0.3 to Vcc+0.3	V	-
Operating temperature	Topr	-10 to +60	°C	-
Storage temperature	Tstg	-20 to +70	°C	-
Soldering temperature	Tsol	260	°C	5s or less/time up 2 times t=1.0mm One side board mounting

■ Recommended operating conditions

Parameter	Symbol	Rating	Unit	Remark
Supply voltage	Vcc	2.7 to 6.2	V	-
High level input voltage	VinH	MIN Vcc-0.2	V	CMOS level signal. Operating
Low level input voltage	VinL	MAX 0.2	V	CMOS level signal. Standby state

■Electro-optical Characteristics

(Ta=25°C, Vcc=5V)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output terminal voltage	VoH	Output voltage at high level	Vcc-0.6	-	-	V
	VoL	Output voltage at low level	-	-	0.6	V
Output distance characteristics	Vo	(*1) (*2)	120	150	220	mm
Average supply current	Icc 1	Vcc=5V Vin=5V R1=4.3Ω (*3)	-	5	6.5	mA
Average supply current	Icc 2	Vcc=5V Vin=5V R1=4.3Ω (*3)	-	9	10.5	mA
Stand-by supply current	Icc 3	Vcc=5V Vin=0V	-	5	8	μA

※ L : Distance to reflective object

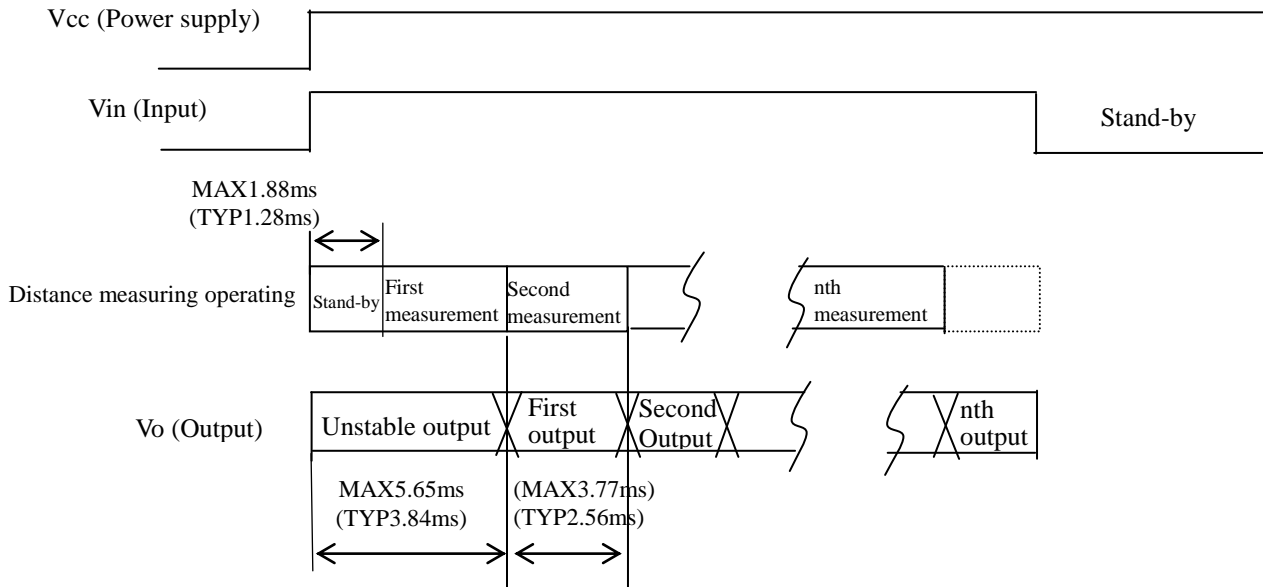
(*1) Using reflective object : White paper (Made by Kodak Co., Ltd. gray cards R-27•white face, reflectance ; 90%)

(*2) Output switching has a hysteresis width.

The distance specified by Vo should be the one with which the output H switches to the output L.

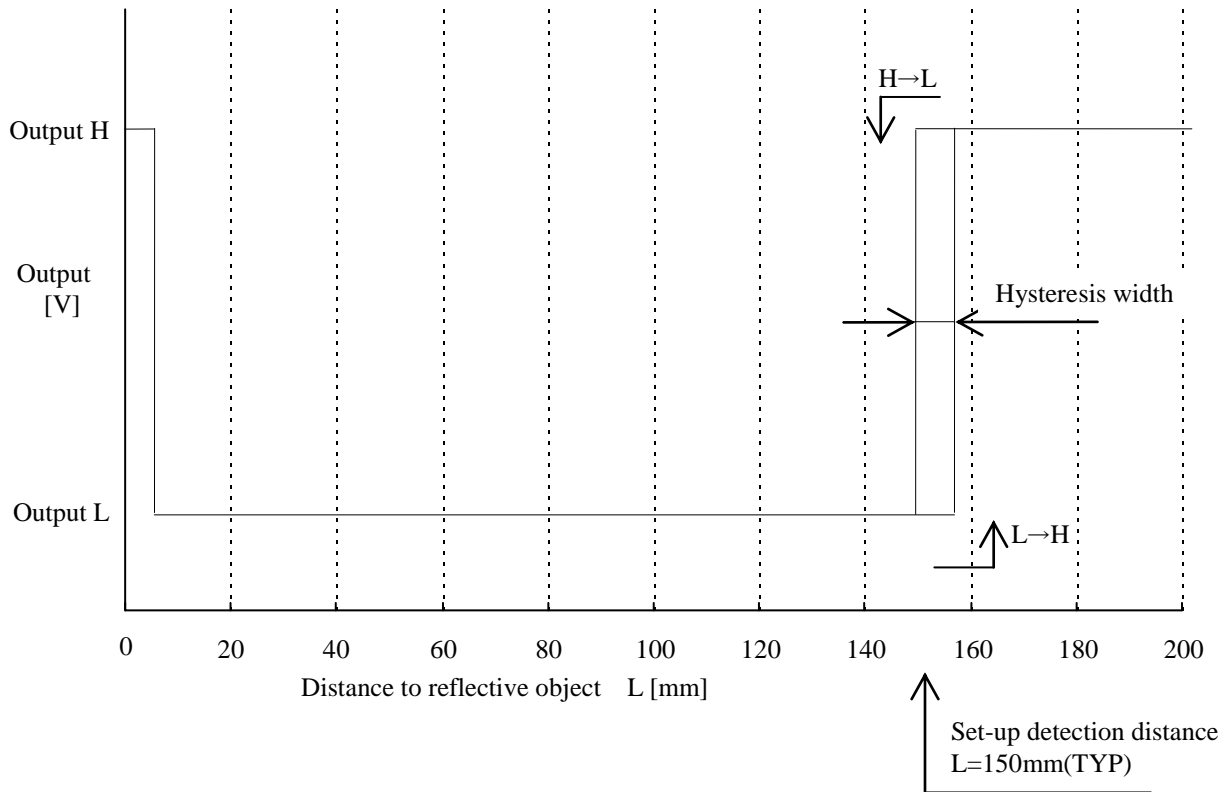
(*3) Icc1 : (LED Emitting time:TYP20μs*8times) Icc2 : (Emitting time:TYP20μs*15times)
LED Pulse Current : TYP 70mA

■Timing chart



■ **Supplements**

- GP2Y0D815Z0F Example of Output distance characteristics

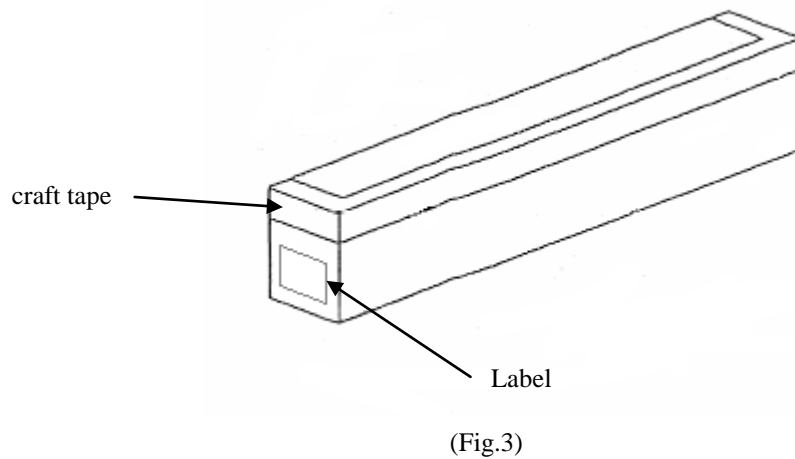
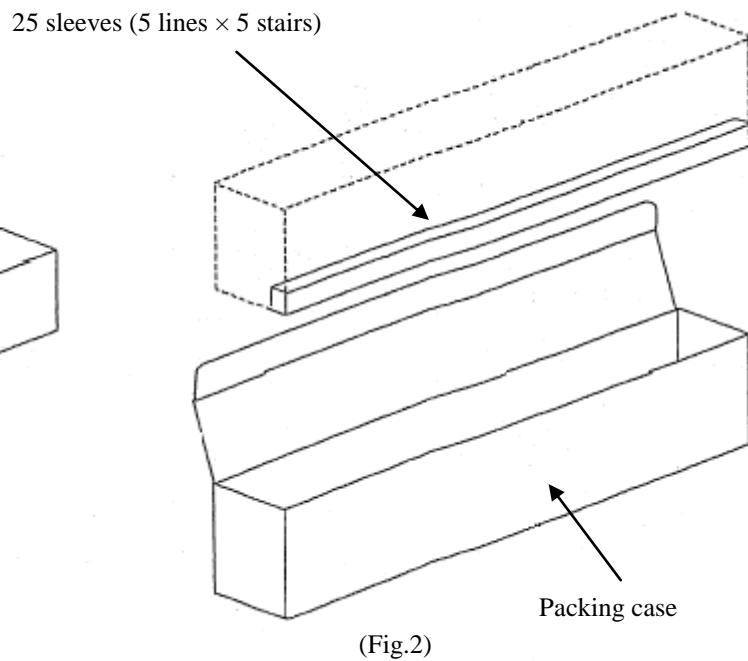
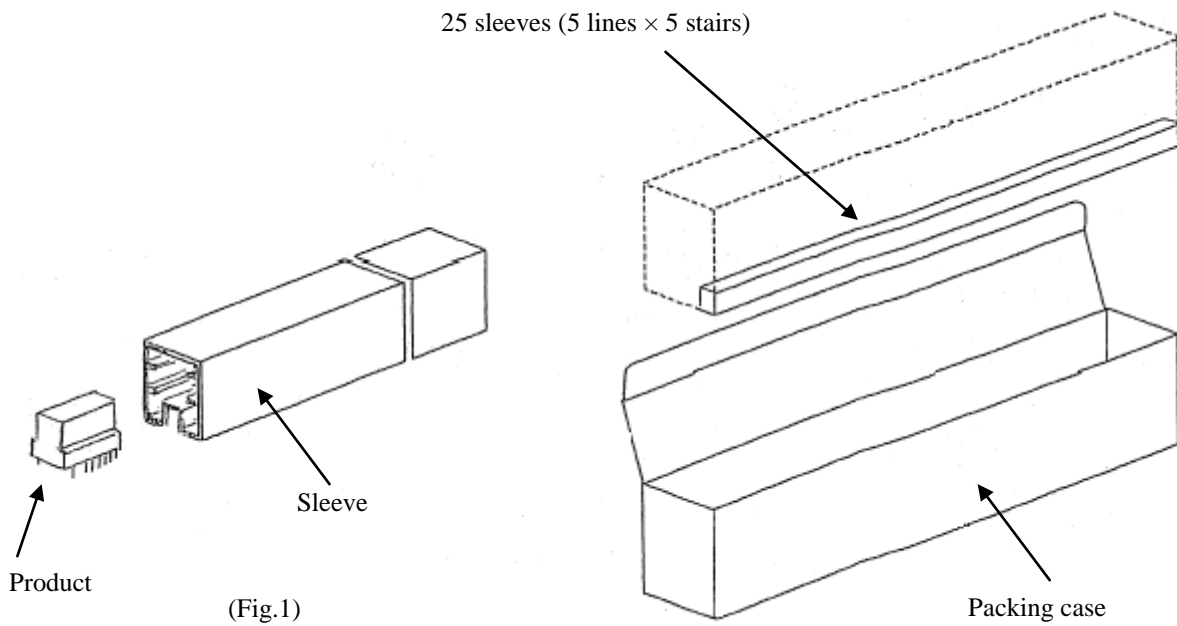


- This product shall not contain the following materials.
Also, the following materials shall not be used in the production process for this product.
Materials for ODS : CFCs, Halon, Carbon tetrachloride 1.1.1-Trichloroethane (Methyl chloroform)
- This manufacture does not contain the chemical materials regurated by RoHS directive.
(except for the parts NOT regurated by RoHS)
- Product mass : Approx. 0.7g
- Compliance with each regulation
 - 1) The RoHS directive(2002/95/EC)
This product complies with the RoHS directive(2002/95/EC).
Object substances: mercury, lead (except for lead in glass of electronic components), cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE)
 - 2) Content of six substances specified in Management Methods for Control of Pollution Caused by Electronic Information Products Regulation (Chinese : 电子信息产品污染控制管理办法).

Category	Toxic and hazardous substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr ⁶⁺)	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Distance measuring sensor	✓	✓	✓	✓	✓	✓

✓ : indicates that the content of the toxic and hazardous substance in all the homogeneous materials of the part is below the concentration limit requirement as described in SJ/T 11363-2006 standard.

■ Packing specification



● Packing method

1. Products of appointed quantity shall be packaged in a sleeve and both of sleeve edge shall be fixed by stopper. MAX. 40 pieces per sleeve. (Fig.1)

The above figure shows the method of storing the product.

2. 25 sleeves shall be packaged in a packing case. (Fig.2)

3. Fix the packing case by craft tape (Fig. 3)

(Quantity per a packing case : 1000pcs.) Outside : 607×64×77 (mm)

4. Indication items

The contents of the carton indication conforms to EIAJ C-3 and the following items are indicated.

Model No., Internal production control name, Quantity, Packing date, Corporate name, Country of origin

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- Industrial control
- Audio visual equipment
- Consumer electronics

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- Traffic signals
- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices, etc.

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