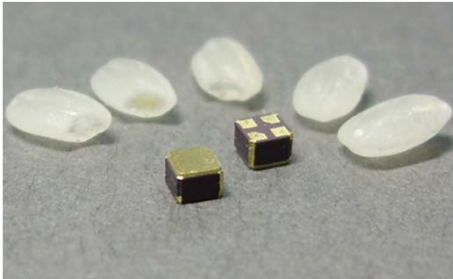


# Model:CMN200

## Date Sheet

※This data sheet is subject to change without notice.



### ◆ Overview

- Innovative sensor utilizing a new manufacturing technology.
- Save energy and extend battery life

### ◆ Key Features:

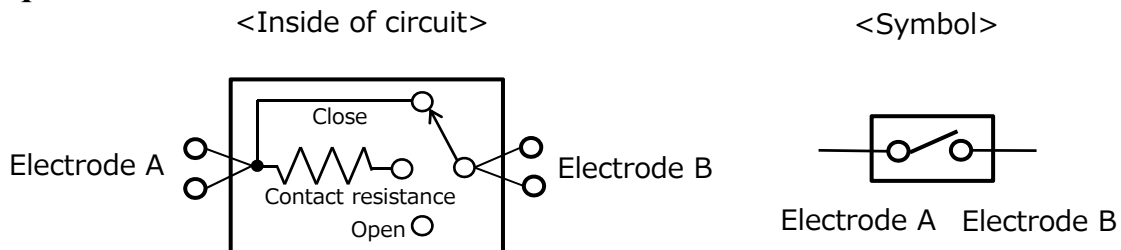
- This sensor device quickly detects vibration and motion from all directions.
- Sensing with high sensitivity
- Highly reliable performance with multilayer ceramic
- Easy circuit design
- Ultra low power consumption
- AEC-200 compliant / RoHS compliant
- Reflow compatible (Pb free)

### ◆ Applications and Use case:

**Static motion detection switch (power saving of wireless communication equipment)**

- Wearable equipment
- Iot equipment
- Active type IC tag
- Smart key
- Anti-theft device

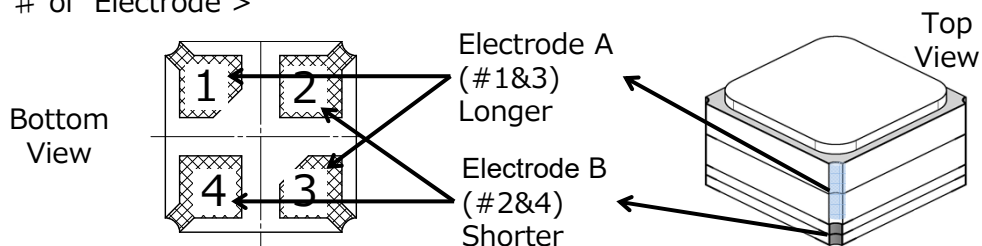
### ◆ Equivalent circuit



### ◆ Electrode (Terminal) function

No	Electrode	Function
1	A	<ul style="list-style-type: none"> <li>•Switch of A contact</li> <li>•Pin #1 &amp; Pin #3 are connected inside</li> </ul>
3		
2	B	<ul style="list-style-type: none"> <li>•Switch of B contact</li> <li>•Pin #2 &amp; Pin #4 are connected inside</li> </ul>
4		

<shape and # of Electrode >



# Model:CMN200

## 3-axis Micro-vibration detection sensor

### ◆ Ratings

Parameter	Symbol	Rating	unit
Electrode Voltage	Vdd	≤6	V
Electrode Current	Idd	(0.01) * <sup>1</sup> ~ 100	μA

\*1 ( ) Values are reference values of evaluation range

### ◆ Characteristics

Parameter	Condition	NIN.	TYP.	MAX.	単位
sensitivity* <sup>1</sup>	10Hz	(0.1)* <sup>2</sup>	0.5	(2) * <sup>2</sup>	G
	0.5G	(5) * <sup>2</sup>	10	(50) * <sup>2</sup>	Hz
Resistance	Closed	-	-	100	Ω
	Open	100M	-	-	
	Contact resistance	100	-	100M	

\*1 Evaluation condition : Ambient temperature 20~25°C, VDD=3V

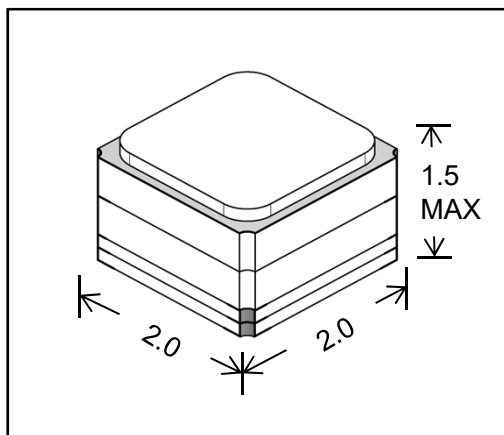
\*2 ( ) Values are reference values of evaluation range

### ◆ Material

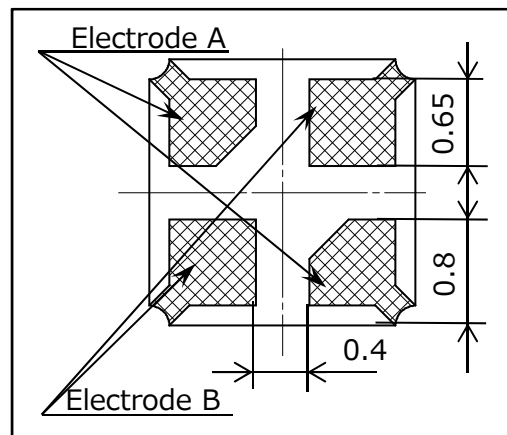
Item	Description
Contact material	Electrode A/B : Fe-Ni-Co alloy Conductive ball : SUS304
Electrode/Conductive ball	Gold plate
Case material	Alumina ceramic
Gas inclusion	Inert gas

### ◆ External Dimensions

Drawing (Unit : mm)



Electrode Pattern (Unit : mm)



**Notes :**

We assume no responsibility whatsoever for the use of any circuits described herein. Conveys no license under any patent or other rights and makes no representations whether the circuits are free from patent infringement or not.

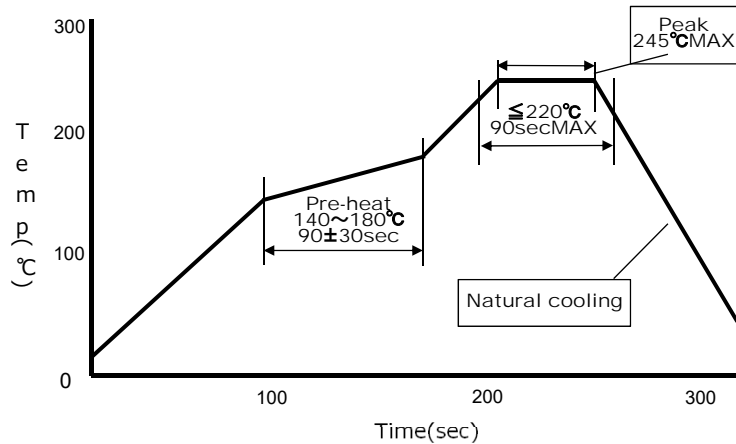


# Model:CMN200

## 3-axis Micro-vibration detection sensor

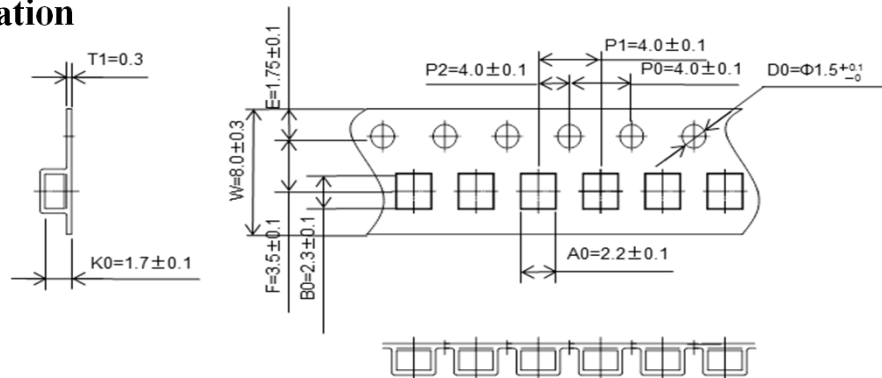
### ◆ Recommended soldering conditions

Reflow  
Temperature Profile  
for reference



### ◆ Packing specification

Packaging Minimum  
Quantity:  
1,000pcs/reel



### ◆ Storage condition

Temperature : +5~40°C  
Humidity : 20~70% RH

### ◆ Performance

Item	Conditions
Temperature range	-40 ~ 125°C
Humidity range	20~85% RH
Vibration durability	50Hz, 1G, ≥300M
ESD(HBM)	Pass Voltage(±V) : 2000 V
ESD(CDM)	Pass Voltage(±V) : 500 V
Impact resistance	1,500G, 6 directions, 3 times each

### ◆ Other

Please contact us for details on the AEC-Q 200 test items

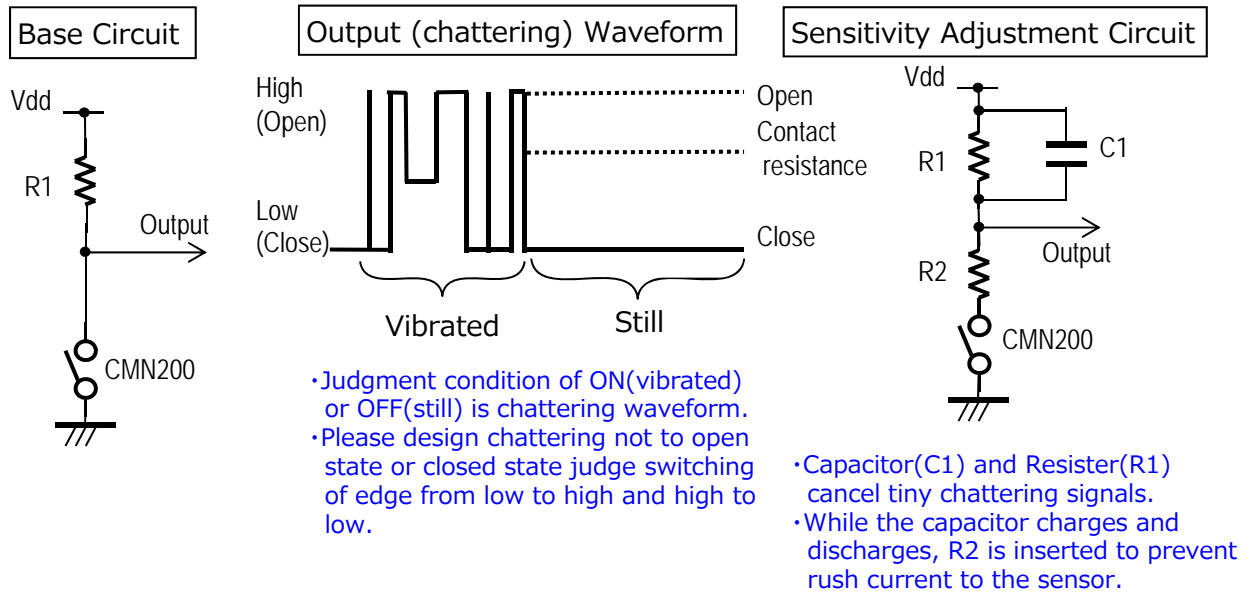
#### 【Caution on handling】

- Please refrain from using this board and installing in other devices in the environment where ultrasound, static electricity and magnetic force may influence.
- Please do not use if failure or malfunction is likely to harm human body directly.
- For questions, please contact G-DEVICE Corp.
- Contact information : web@catch-sensor.co.jp

# Model:CMN200

## 3-axis Micro-vibration detection sensor

### ◆ Application Circuit Example



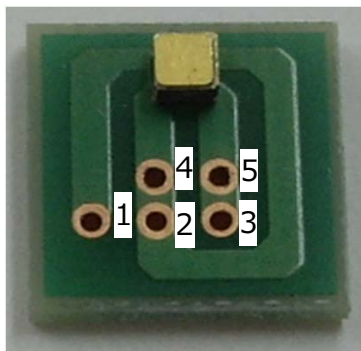
Note : We are not responsible for any infringement of patents or other rights of third parties arising from the use of information in this material or by use.

### ◆ Evaluation Board

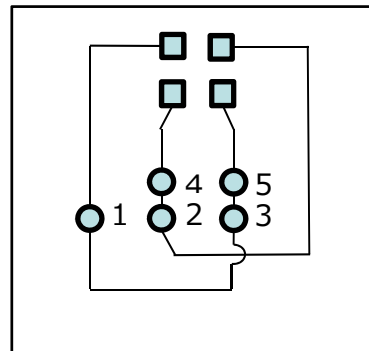
The board has mounted the parts to carry out evaluation of the sensor.

Part Number : CMN200-K

Picture of CMN200-K



Circuit Diagram



PCB Size : 10mm x 10mm  
 Terminal hole Size : φ1.2 mm  
 Terminal hole Pitch : 1.5 mm (2-4,3-5)

**Note :**

- Electrode numbers are not printed on the PCB.
- Orientation of the sensors mounted on the substrate(the position of A/B electrode) is optional.
- There is not polarity to the sensor.



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