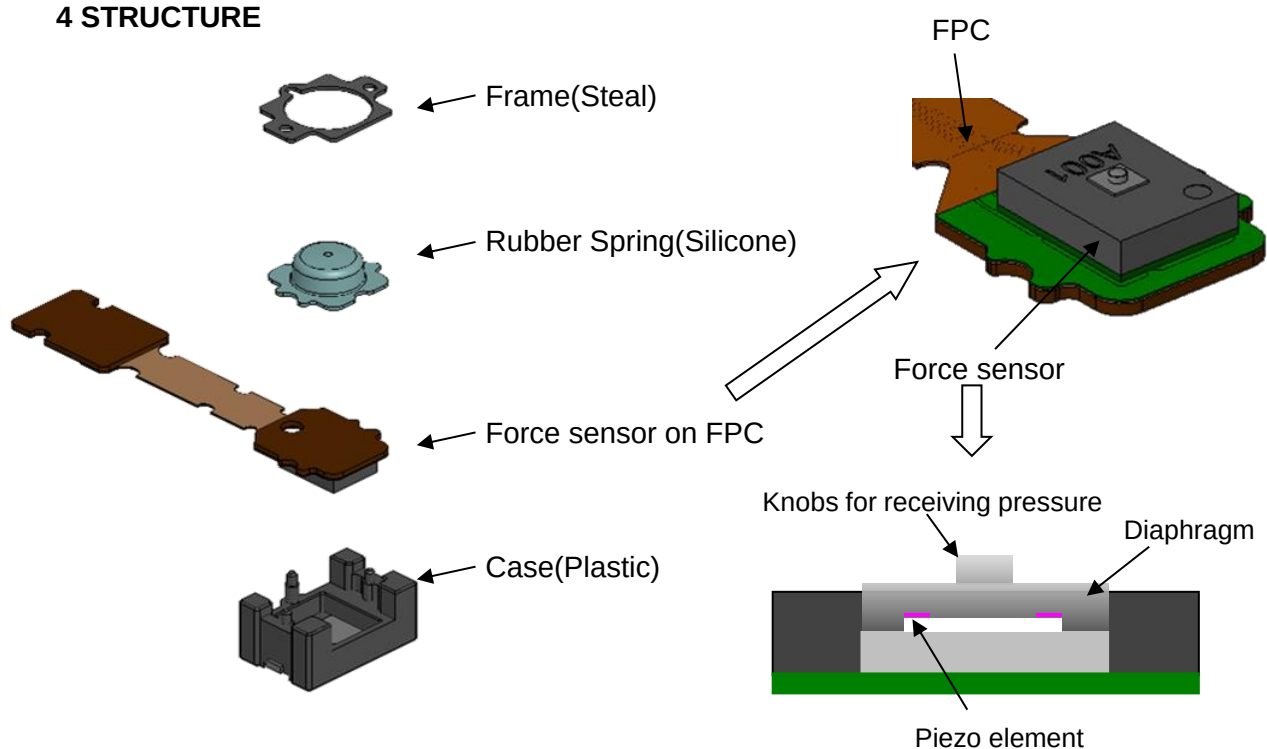
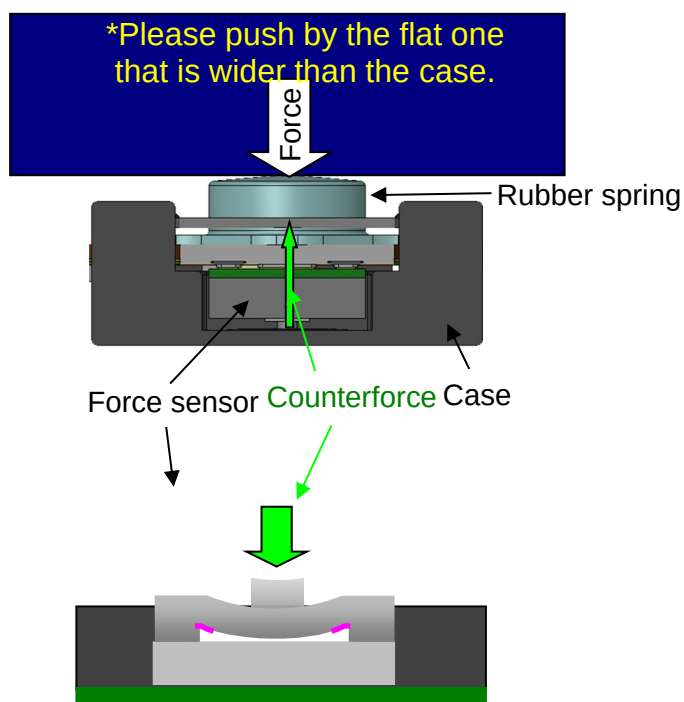


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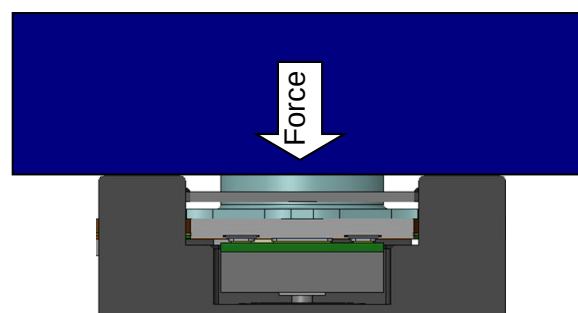
4 STRUCTURE



5 OPERATING PRINCIPLE



If the overforce is applied to the sensor, the force is limited by the case.



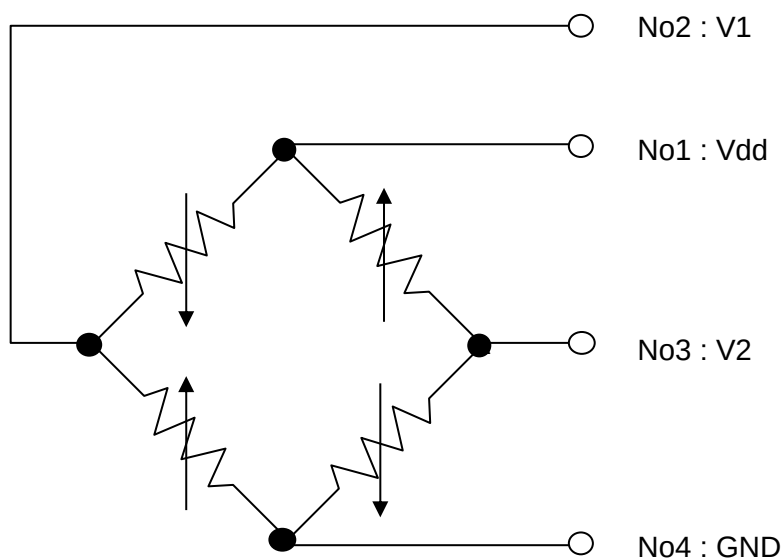
- (1) Diaphragm is strained by counterforce.
- (2) Resistance of Piezo element on the diaphragm is changed
- (3) Differential voltage is outputted in response to the force change.

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6 BLOCK DIAGRAM



端子番号/Pin No.	記号/Name	機能/Function
No1	Vdd	電源/Supply Voltage
No2	V1	+出力信号/Output(+)
No3	V2	-出力信号/Output(-)
No4	GND	GND

***Output = V1-V2**

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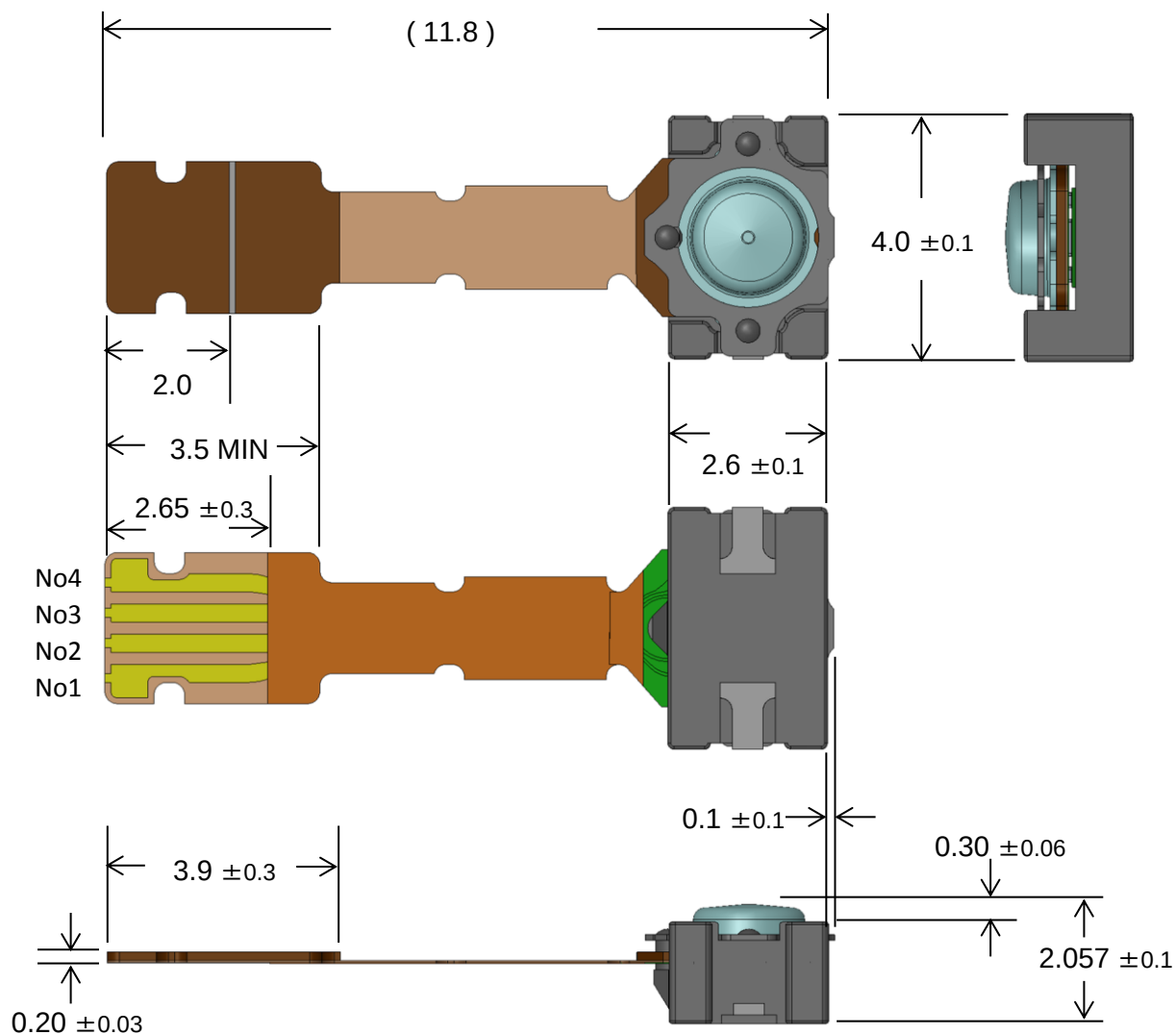
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7 FULL VIEW



端子番号/Pin No.	記号/Name	機能/Function
No1	Vdd	電源/Supply Voltage
No2	V1	+出力信号/Output(+)
No3	V2	-出力信号/Output(-)
No4	GND	GND

*Output = V1-V2

Recommended connector

Maker: KYOCERA Connector Products Corporation

(<http://www.kyocera-connector.com/en/prdct/list/fpcffc/6277-series/>)

Product No: 6277 series(4pad)、0.5mmPitch

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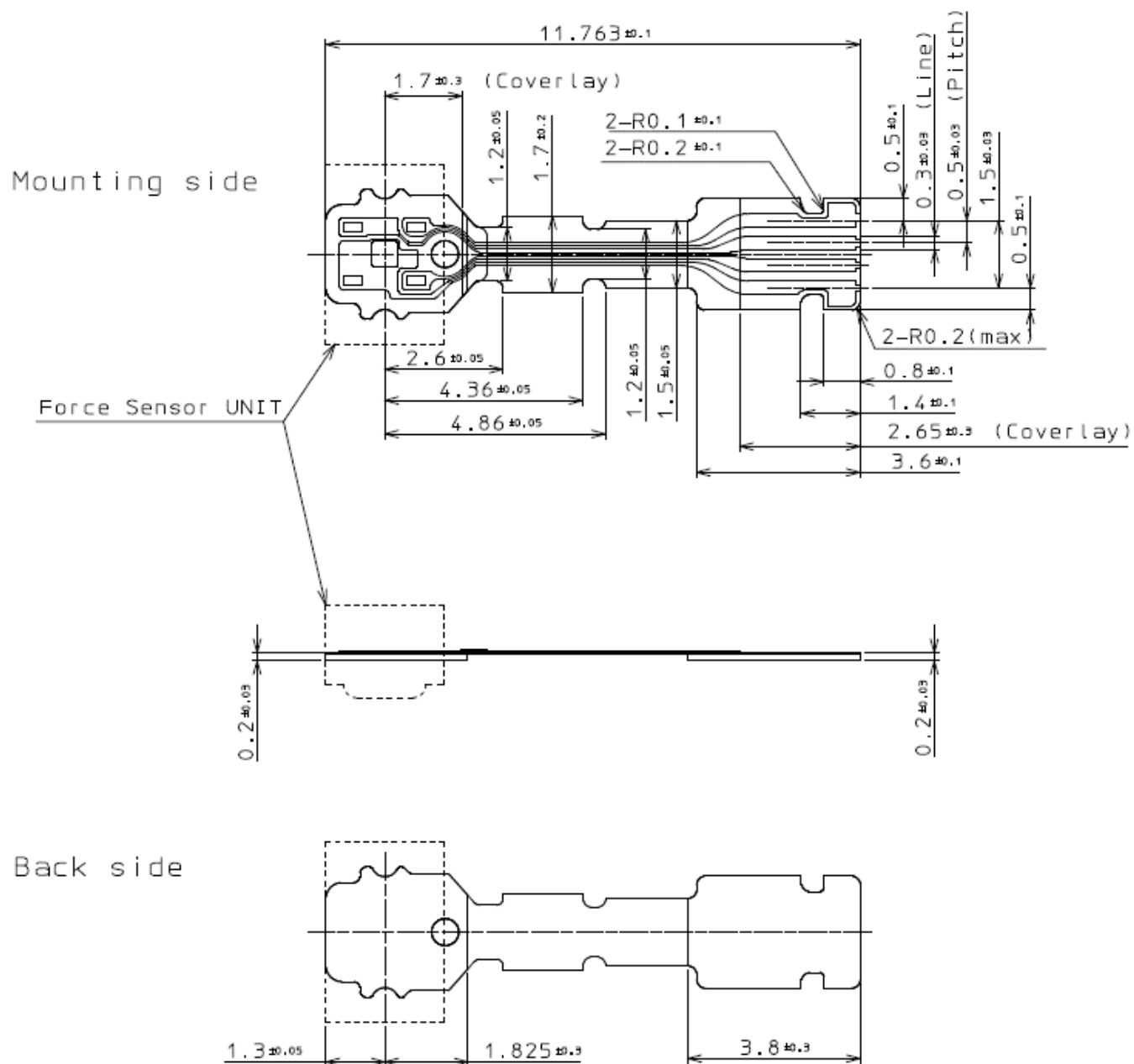
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8 FLEX SPECIFICATION



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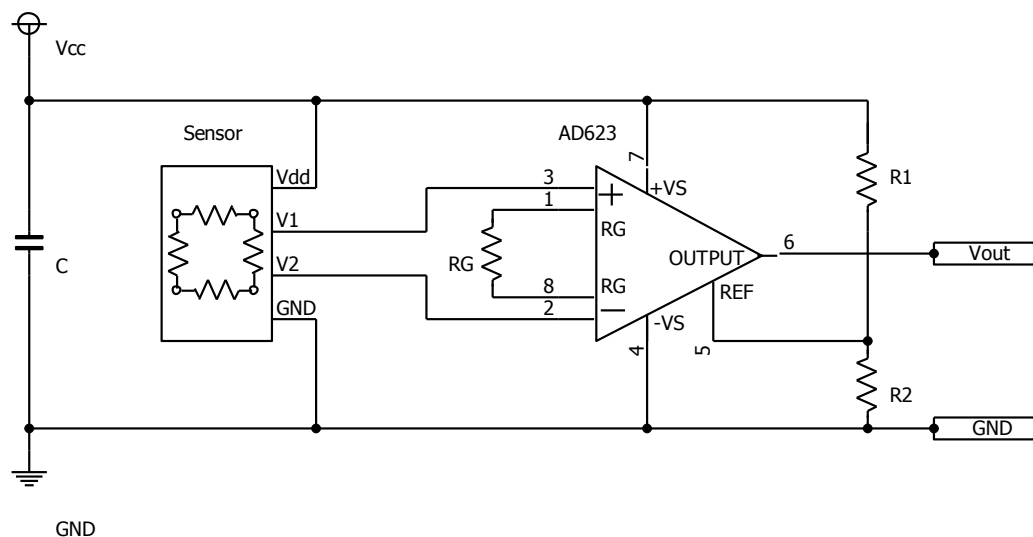
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9. 推奨回路

Recommended circuit

9-1. アナログ回路例

Example circuit for analog output.



推奨値 Recommended value

電源電圧 Source Voltage	Vcc	[V]	3.3
計装アンプ Instrumentation amplifier	-		AD623
増幅率調整抵抗 Gain adjustment Resistance	RG	[kΩ]	1.3
オフセット調整抵抗 Offset adjustment Resistance	R1	[kΩ]	10.0
	R2	[kΩ]	3.0
コンデンサ Capacitance	C	[uF]	0.1
感度 Sensitivity	Sens	[mV/N]	(952)

参考 Reference

増幅率 $\text{Gain} = (1 + 100\text{k}\Omega / \text{RG})$
 オフセット $\text{Offset voltage} = \text{R2} / (\text{R1} + \text{R2}) * \text{Vcc}$
 出力 $\text{OUTPUT} = \text{Gain} * \text{Vin} + \text{Offset voltage}$

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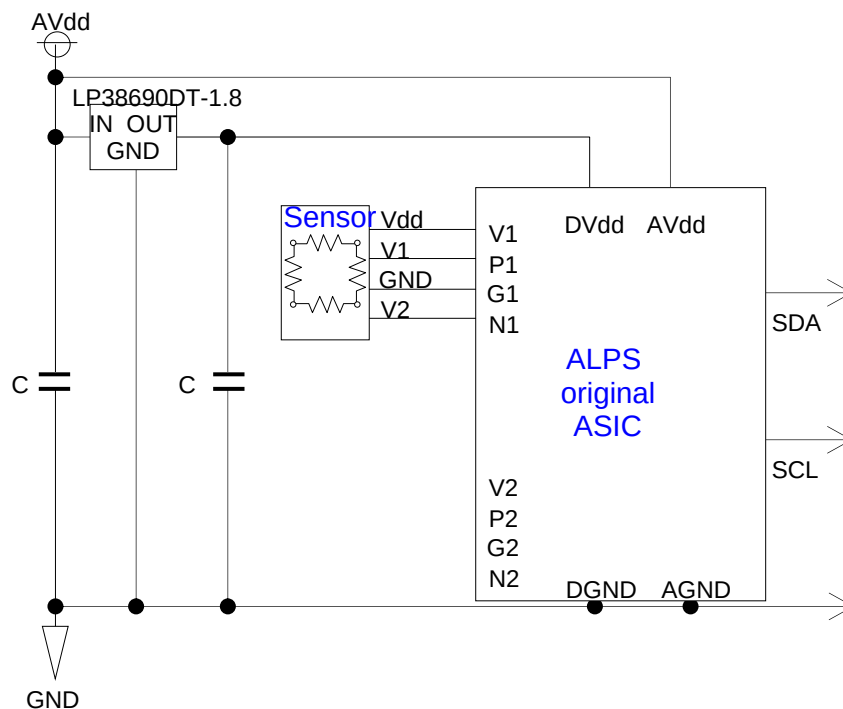
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9-2. デジタル回路例

Example circuit for digital output.

[1 Sensor use]



※ Alps original ASIC is supplied if there is a request.

推奨値 Recommended value

アナログ電源電圧 Analog Source Voltage	AVdd	[V]	2.4~3.6
デジタル電源電圧 Digital Source Voltage	DVdd	[V]	1.7~AVdd
レギュレータ Regulator	-		LP38690DT-1.8
コンデンサ Capacitance	C	[uF]	0.1
感度 Sensitivity	Sens	[Count/N]	(1150)
動作荷重範囲 Force range	Frng	[N]	0~3.0

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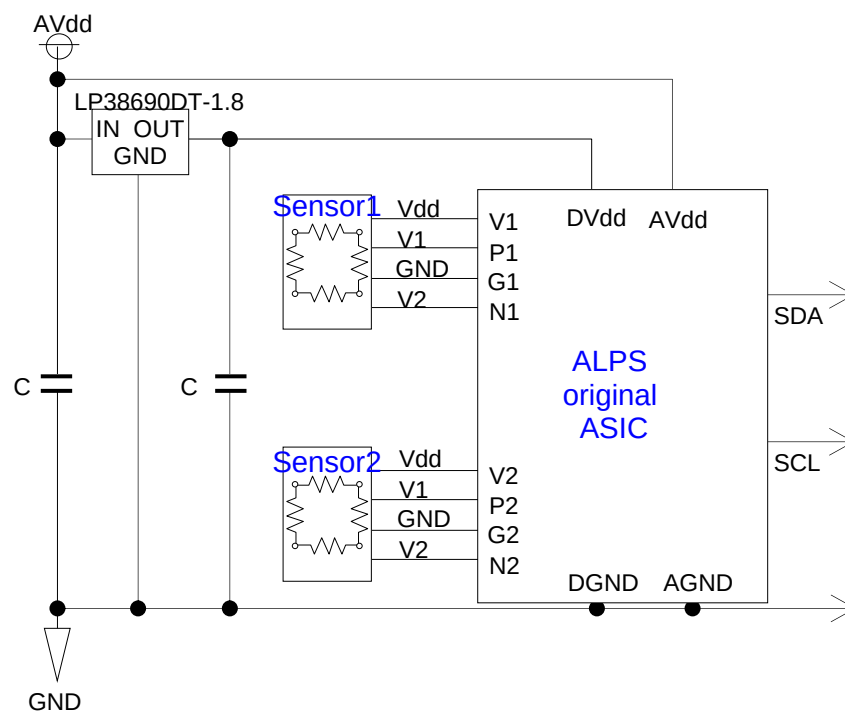
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[2 Sensor use]



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推奨値 Recommended value

アナログ電源電圧 Analog Source Voltage	AVdd	[V]	2.4~3.6
デジタル電源電圧 Digital Source Voltage	DVdd	[V]	1.7~AVdd
レギュレータ Regulator	-		LP38690DT-1.8
コンデンサ Capacitance	C	[uF]	0.1
感度 Sensitivity	Sens	[Count/N]	(1150)
動作荷重範囲 Force range	Frng	[N]	0~3.0

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10. 評価方法例

Evaluation example

Notes

- When the gauge is touched to the sensor, it does slowly.
- The gauge is vertically touched to the sensor.
- Force more than the maximum ratings is not added.

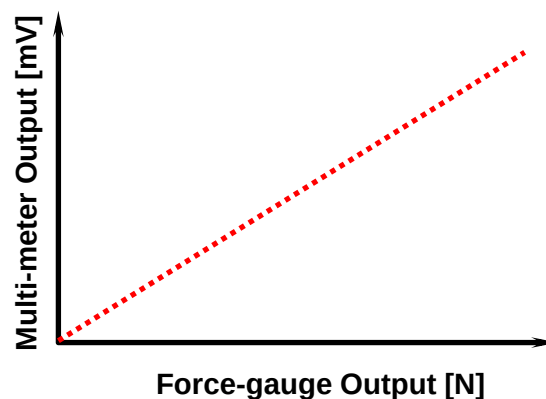
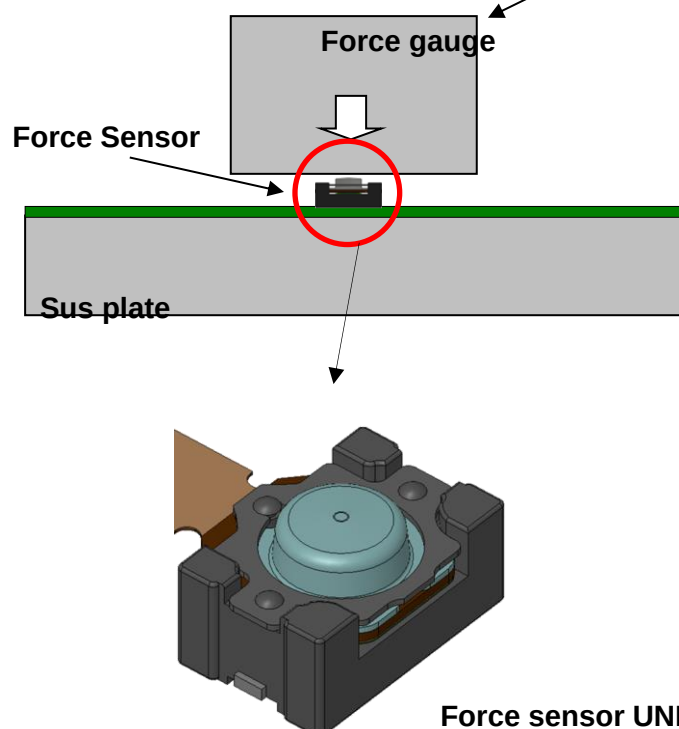
Multi-meter



Force gauge (IMADA Co., Ltd.)



DC power supply unit



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Electrical specifications

The graph shows Output [mV] on the y-axis and Force [N] on the x-axis. A solid red line represents the linear fitting curve, and a dotted blue line represents the actual sensor output. The curve starts at the origin (0,0). Two points, A and B, are marked on the curve. The vertical distance between the curve and the x-axis at point B is labeled FS. The vertical distance between the curve and the x-axis at point A is labeled A. The vertical distance between the curve and the x-axis at point B is labeled B. The vertical distance between the curve and the x-axis at point B is labeled FS.

Linear fitting curve :

$$[\text{Output}] = [\text{Force}] \times [\text{Vdd}] \times \alpha + [\text{Vdd}] \times \beta$$

- *Sensitivity : α
- *Null Offset : β
- *Linearity : $(A+B)/FS \times 100$

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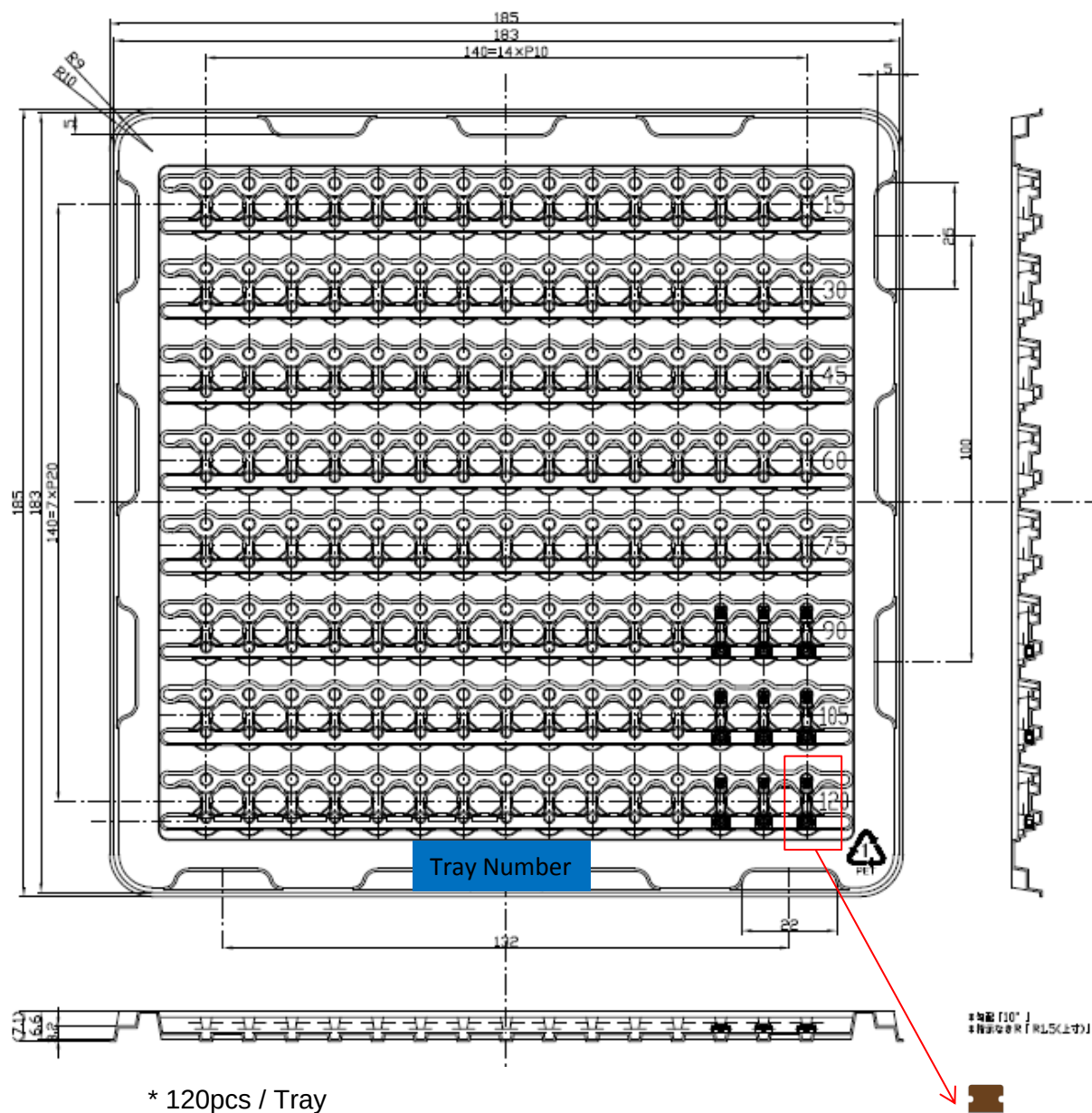
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12. 梱包仕様

Packing specification

12-1. トレイ仕様

Tray specification



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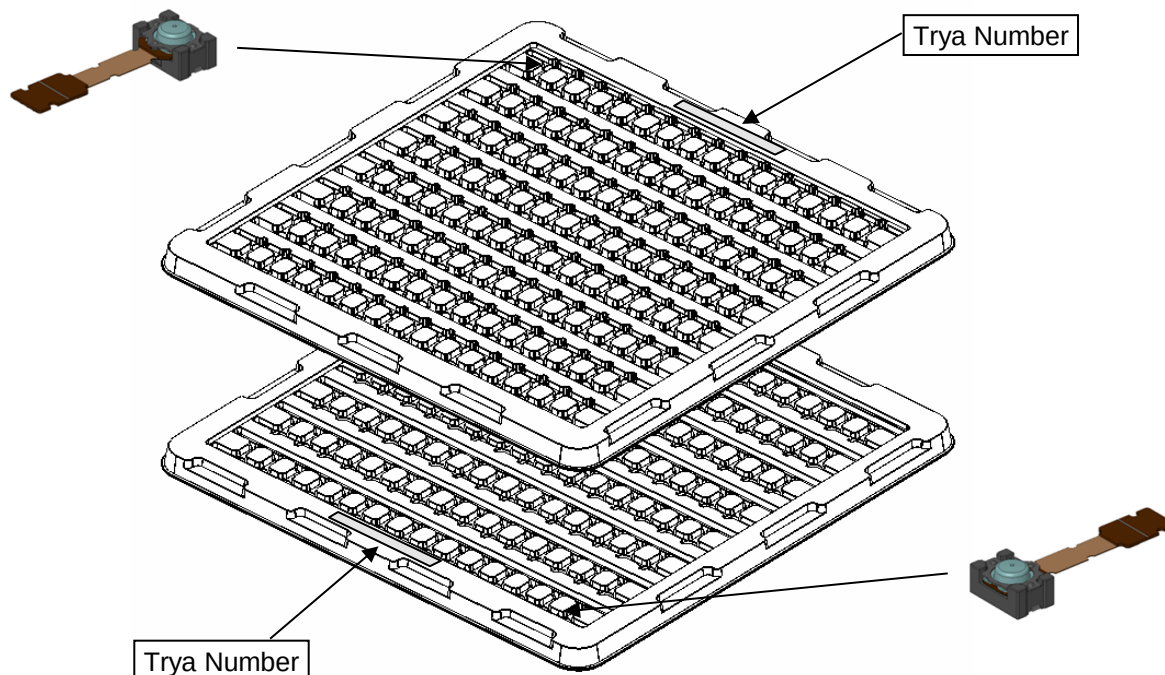
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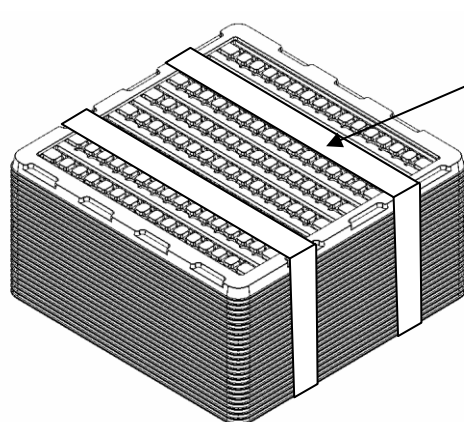
12-2. トレイの積み重ね
Stacking of the tray

<Fig.1>

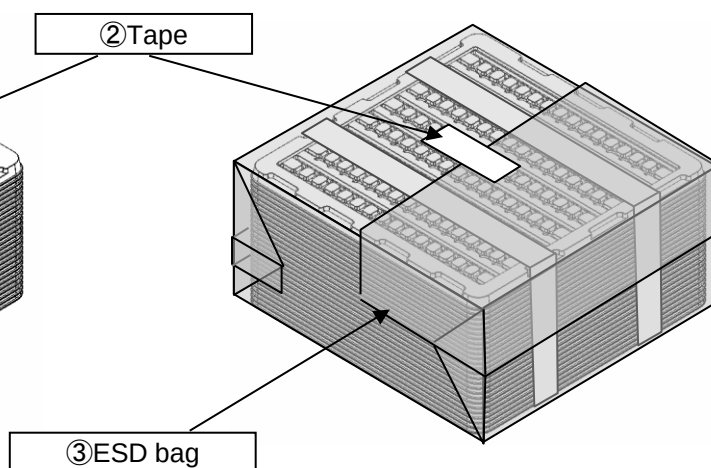


- Tray is stacked in upside down alternately.<Fig.1>
- Stacking of the tray is up to 26 trays (25trays + Cover) and taped it. (3000pcs Max) <Fig.2>
- It is placed in ESD bag. <Fig.3>

<Fig.2>



<Fig.3>



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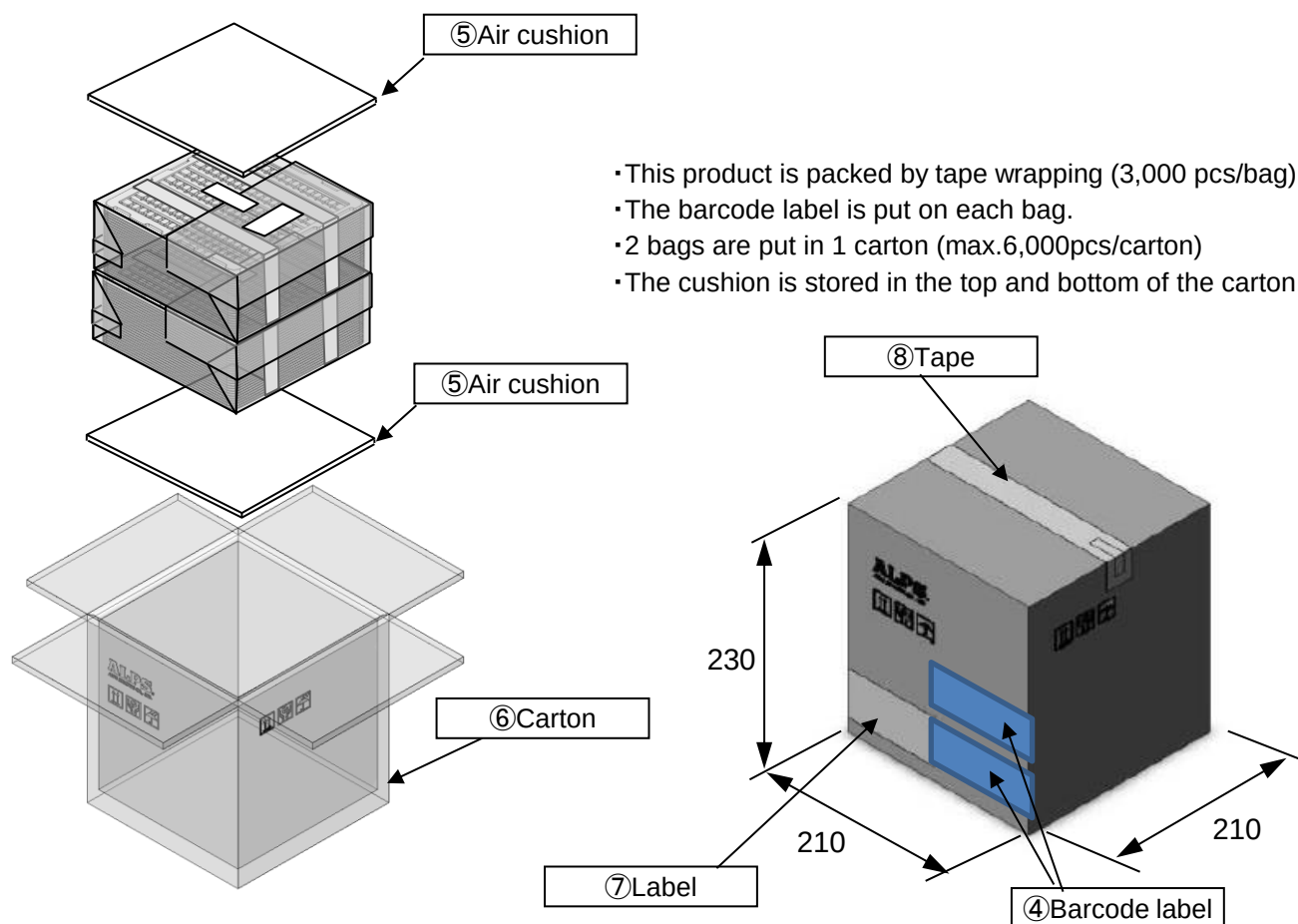
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12-3. 梱包箱
Packing box


● **Recommended storage condition**
MSL1

● **Damp-proof packing**
None

● **Stacking height of carton**
Maximum 5cartons

● **Minimum Order Quantity、Standard Packing Quantity**
3,000 pcs

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