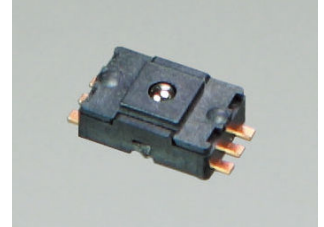


## Model No. HFD-500S

Utilizing long home-nurtured silicon micro-machining technology as core technology, we made it possible to precisely detect micro force less than 1N, which otherwise can not be achieved with conventional method.

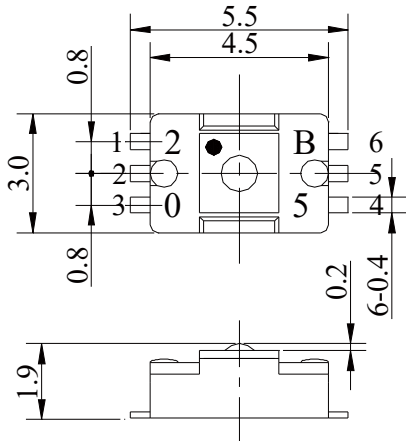
### ■ Features

- Small size Low profile    • Outline dimension 5.5 × 3.0 × 1.9mm
- Capable of Micro-Force Detection with High Sensitivity, High Precision
- High durability, Life cycle 1 million cycles or more



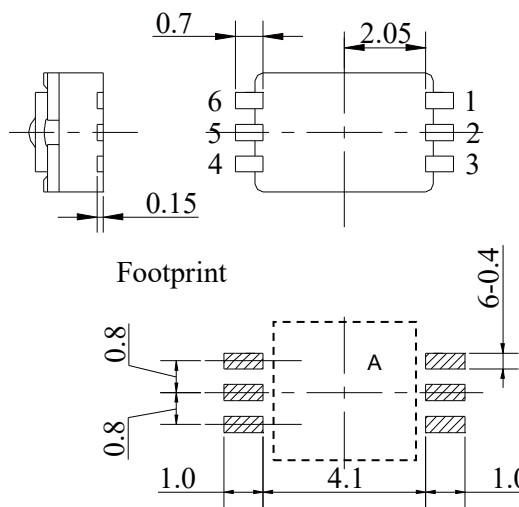
Model No. HFD-500S

### ■ Outline Dimension



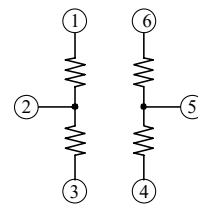
Unit : mm

Typical tolerance : ±0.1



Footprint

A : Pattern restricted area



Terminal

①	Vcc
②	+OUTPUT
③	GND
④	GND
⑤	-OUTPUT
⑥	Vcc

### ■ Specification

#### 1. Maximum Absolute Rating

Item	Rating			Unit	Remark
Supply Voltage	-	-	5.5	Vdc	
Storage Temperature Range	-40	-	85	°C	
Operating Temperature Range	-20	-	60	°C	
Breaking Load	70	-	-	N	Including shock
Life	1000k	-	-	Cycles	5 ~ 10N 60Hz(Sine wave)
Reflow Temperature	-	-	250	°C	60 sec or less at 230°C or more,
			10	sec	2 times Max.

#### 2. Rating (Ta=25°C, Vcc=Usable at less than 5.5V)

Item	Rating			Unit	Remark
	Min.	Typ.	Max.		
Operating Force Range	0	-	10	N	
Bridge Resistance	18	25	32	kΩ	
Offset Voltage	-10	-	10	mV/V	Output Voltage when 0[N] is applied *1, *2
Sensitivity	-	4.7	-	mV/V/N	
Linearity	-3	-	3	%FS	FS=Full Scale Span
Offset Temp. Characteristics	-5	-	5	mV	Δfrom +25°C
Sensitivity Temp. Characteristics	-0.1	-	0	mV/N/°C	-20 ~ +60°C

\*1 The sensor output (Output Voltage) is ratiometric to the drive voltage

\*2 OUTPUT Voltage = (+OUTPUT Voltage) - (-OUTPUT Voltage)

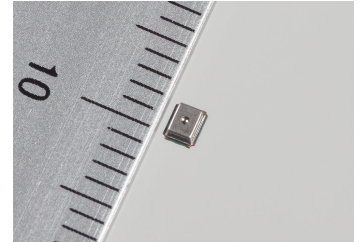
\*3 Please consult us separately for medical and automotive use.

## Model No. HFD-20N-A01

Utilizing long home-nurtured silicon micro-machining technology as core technology, we made it miniaturized and possible to precisely detect micro force.

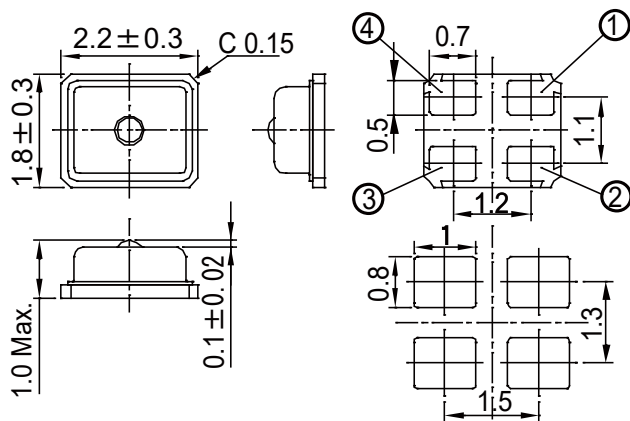
### ■ Features

- Small size, Low profile package size 2.8 × 1.8 × t1.0mm Max.
- Capable of Micro-Force Detection with High Sensitivity, High Precision
- High durability, Repetitive Force more than 1 million cycles



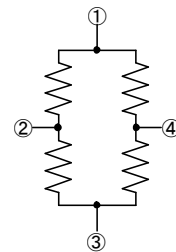
Model No. HFD-20N-A01

### ■ Outline Dimension



Unit : mm

Typical tolerance :  $\pm 0.1$



Internal Circuit

	Terminal
①	Vcc
②	+OUTPUT
③	GND
④	-OUTPUT

### ■ Specification

#### 1. Maximum Absolute Rating

Item	Rating			Unit	Remark
Supply Voltage	-	-	5.5	Vdc	
Storage Temperature Range	-40	-	85	°C	
Operating Temperature Range	-20	-	60	°C	
Breaking Load	30	-	-	N	
Life	1000k	-	-	Cycles	
Reflow Temperature	-	-	250	°C	60sec or less at 230°C or more, 2 times Max.
	-	-	10	sec	

#### 2. Rating (Ta=25°C, Vcc=Usable at less than 5.5V)

Item	Rating			Unit	Remark
	Min.	Typ.	Max.		
Operating Force Range	0	-	20	N	
Bridge Resistance	3.5	5	6.5	kΩ	
Offset Voltage	-3.3	-	3.3	mV/N	Output voltage when 0[N] is allied *1, *2
Sensitivity	-	5	-	mV/V/N	
Linearity	-3	-	3	%FS	FS=Full Scale Span
Offset Temp. Characteristics	-5	-	5	mV	Δfrom +25°C
Sensitivity Temp. Characteristics	-0.1	-	0	mV/N/°C	at -20 ~ +60°C

\*1 The sensor output (Output Voltage) is ratiometric to the drive voltage

\*2 OUTPUT Voltage = (+OUTPUT Voltage) - (-OUTPUT Voltage)

\*3 Please consult us separately for medical and automotive use.