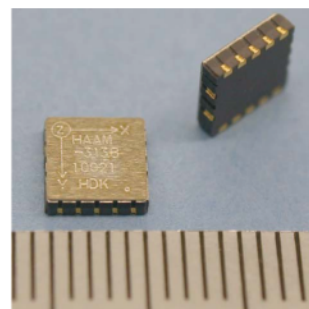


HAAM-313B

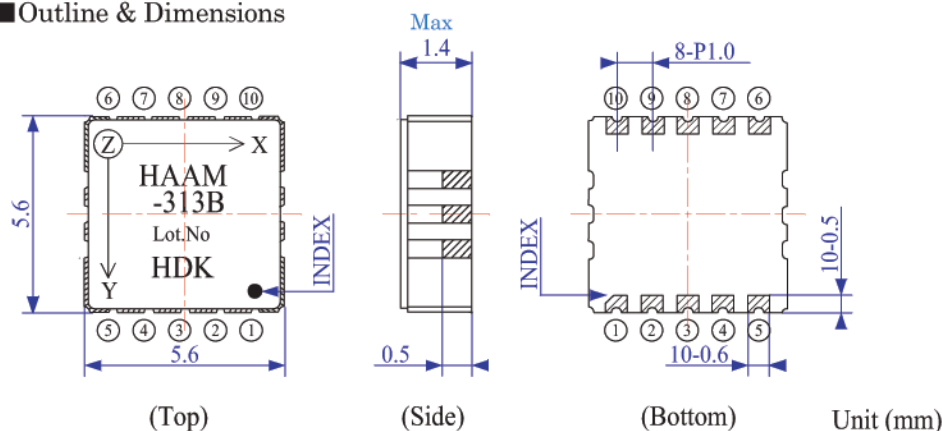
Piezoresistive type 3-axis acceleration sensor, produced by latest semiconductor process, micromachining technology achieved low voltage operation, high sensitivity and high precision, and suits all users' needs.

■ Features

- It is possible to detect dynamic acceleration (vibration , shock , etc) in the directions of X, Y & Z (3-axis) and static acceleration (tilt , gravitational acceleration) simultaneously.
- High sensitivity in low acceleration range. ($\pm 2G$).
- Low voltage operation is possible. (as low as 2.5V)
- Small, low profile and light weight made possible high density mounting.
Package size : $5.6 \times 5.6 \times 1.4$ Max. mm
- Shock resistance surpasses 5000G and strong against damage.
- Low current consumption
Operating : 0.7mA Typ. at 3V
Standby : $1 \mu A$ Typ.



■ Outline & Dimensions



Terminal

(1)	GND
(2)	NC
(3)	STANBY
(4)	NC
(5)	NC
(6)	Vcc
(7)	Cset
(8)	X out
(9)	Y out
(10)	Z out

(3)Lo:Standby
Hi(Vcc):Operating

■ Specifications

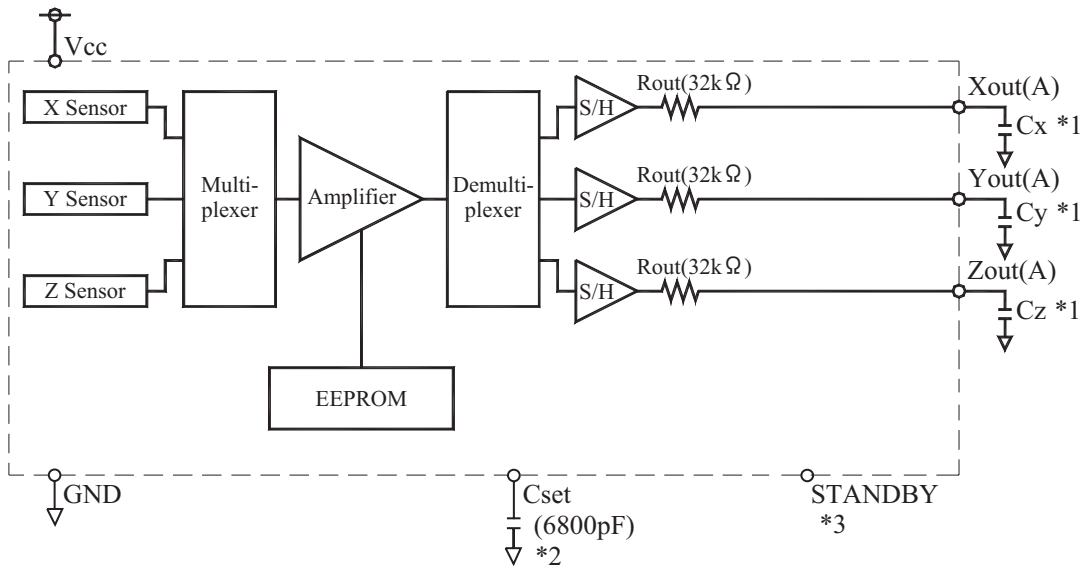
Item	Rating			Unit	Note		
	Min	Typ	Max				
Operating Condition							
Temperature Range	Storage Temperature Range		-40	85	°C		
	Operating Temperature Range		-25	75	°C		
Power Supply Voltage	Operation Voltage Range		2.5	5.25	V	Ratiometric Vcc=3.0V	
	Consumption Current		0.7	1	mA		
	Standby Current		1	5	μA		
	Turn-On Time		$160 \times C(X,Y,Z) + 2$		ms	Until it becomes 99%	
Shock Resistance			5000		G		
Output Rating (Ta=25°C Vcc=3.0V)							
Measurement Range	Rated Acceleration		-2	2	G		
	Tilt Detection Range		-90	90	deg		
Analog Output	Offset Voltage (Xout,Yout,Zout)		1.425	1.5	1.575	V	Ratiometric against Input Voltage
	Offset Temperature Characteristics		-10		10	%FS/G	Δ from +25°C
	Sensitivity		360	400	440	mV/G	Ratiometric against Input Voltage
	Linearity		-2		2	%FS	
	Sensitivity Temperature Characteristics		-3		3	%FS/G	Δ from +25°C
	Cross-Axis Sensitivity		-5		5	%	
Frequency Characteristics	Frequency Response		DC		500	Hz	
	Sensor Resonance Frequency		1			KHz	

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 电话：0755-83680810 83680820 83680830 83680860
 网址：www.apollounion.com

邮编：518031
 传真：0755-83680866
 邮箱：sales@apollounion.com

■ Block Diagram



*1 ★Band setting of Analog Output

It is possible to limit bandwidth for each analog output on HAAM-313B. It is done by connecting a capacitor to each output terminal and forming low-pass filter with inner resistor. 3dB bandwidth is calculated by the following formula.

$$F_{-3dB} = \frac{1}{(2\pi(32k\Omega) \times C_{(X,Y,Z)})}$$

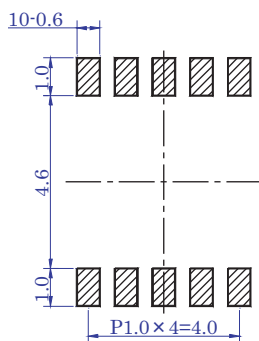
Table. Capacitor Selection (C_X, C_Y, C_Z)

Bandwidth	Capacitor Value
2Hz	2.20 μ F
10Hz	0.47 μ F
50Hz	0.10 μ F

*2 ★Capacitor to cut internal noise Please connect 6800pF.

*3 ★Mode selection (Operating or Standby) can be done by setting Standby terminal, which High sets Operating mode and Low sets Standby mode.

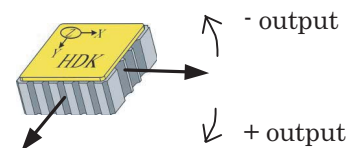
■ Recommended Footprint



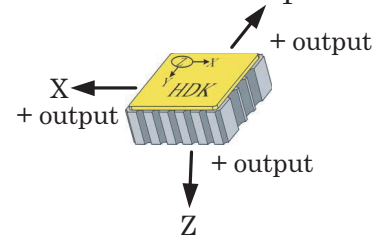
This dimensional information does not guarantee soldering. Please use it upon checking in advance at customer side.

■ Output Direction

tilt (gravitational acceleration)



dynamic acceleration



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