Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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KX023 Accelerometer

3x3x0.9mm Accelerometer with FIFO/FILO Buffer

FEATURES

- 3x3x0.9mm LGA package
- Full-featured algorithm engine including:
  - Tap detection, orientation detection, activity monitoring, and embedded motion wake-up algorithms
- Low current consumption in all modes:
  - 0.9 µA in standby,
  - 10 µA at normal resolution, and
  - 145 µA at high resolution
- Two interrupt registers
- User-configurable, embedded wake-up function to conserve battery power
- Internal voltage regulator to maintain constant internal operating voltages throughout the 1.8 - 3.6V input supply range

APPLICATIONS

- User Interface
- Power Management
- Active/Inactive Monitoring
- Device Orientation
- Inclination and Tilt Sensing
- Gesture Recognition
- Pedometer/Activity Monitoring
- Motion-controlled user interface

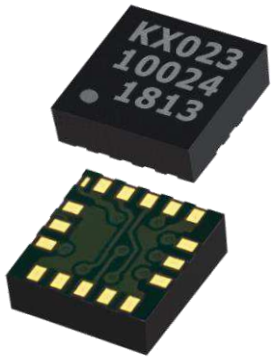
FOR

- Smartphones and Mobile Devices
- Laptops
- Gaming and Virtual Reality
- Health and Fitness

PRODUCT OVERVIEW

The KX023 accelerometer delivers unparalleled flexibility, enabling you to optimize power and noise performance to meet your product design needs. By simply selecting the output data rate (ODR) and amount of oversampling for data averaging you can tune power and noise performance to meet the needs of your specific application.

In addition, the 3-axis KX023 offers I2C/SPI output and an integrated FIFO/FILO buffer that features a wide range of embedded functionality, including tap detection, orientation, activity, and wake-up algorithms. Kionix's XAC sensor provides outstanding stability with a market-leading combination of improved shock, reflow, and thermal performance.



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KX023 Accelerometer

3x3x0.9mm Accelerometer with FIFO/FILO Buffer

The performance parameters below are programmed and tested at 2.6 volts and T = 25°C. The device can accept supply voltages from 1.8V to 3.6V. Due to internal voltage regulators, there should be minimal change with supply voltage variations.

PERFORMANCE SPECIFICATIONS			
PARAMETERS	**UNITS**	**KX023-1025**	**CONDITION**
Range	g	±2.0, ±4.0, ±8.0	User-selectable full-scale output range
Sensitivity[1]	counts/g	16384, 8192, 4096	16-bit
		64, 32, 16	8-bit
0g Offset vs. Temp	mg/°C	0.2	-40°C to +85°C
Sensitivity vs. Temp	%/°C	0.01	-40°C to +85°C
Mechanical Resonance[2]	Hz	3500 (xy) 1800 (z) typical	-3dB
Output Data Rate (ODR)[3]	Hz	0.781 min; 50 typical; 1600 max	
Non-Linearity	% of FS	0.6 typical	% of full scale output
Cross-axis Sensitivity	%	2.0 typical	
Noise[4]	mg	0.75 typical	
I^2C Communication Rate	MHz	3.4 max	
SPI Communication Rate	MHz	10 max	
Power Supply	V	1.8V – 3.6V typical	
Current Consumption[5]	µA	145 typical	High resolution (RES = 1)
		10 typical	Low resolution (RES = 0)
		0.9 typical	Standby
ENVIRONMENTAL SPECIFICATIONS			
PARAMETERS	**UNITS**	**KX023-1025**	**CONDITION**
Operating Temperature	°C	-40 to 85	Powered
Storage Temperature	°C	-55 to 150	Un-powered
Mechanical Shock	g	5,000, 0.5 ms 10,000, 0.2 ms	Powered or un-powered, halversine
ESD	V	2,000	Human body model

NOTES

[1] Resolution and acceleration ranges are user selectable via I^2C or SPI.
[2] Resonance as defined by the dampened mechanical sensor.
[3] User selectable through I^2C or SPI.
[4] RMS at 50Hz with low-pass filter = ODR/9
[5] Current varies with Output Data Rate (ODR).

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