



**THE DATASHEET OF
KXTJ2-1009-FR**



KXTJ2 Accelerometer

2x2x0.9mm Low-Power Accelerometer



FEATURES

- Ultra-small Package - 2x2x0.9mm LGA
- User-selectable g Range and Output Data Rate
- 8-bit, 12-bit, and 14-bit Resolution
- Low Power Consumption
- Internal voltage regulator
- User-configurable wake-up function
- Digital I²C
- Lead-free Solderability
- Excellent Temperature Performance
- High Shock Survivability
- Factory Programmable Offset and Sensitivity
- Self-test Function

APPLICATIONS

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

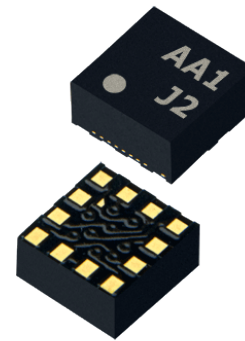
FOR

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

PRODUCT OVERVIEW

The KXTJ2 is one of our smallest tri-axis accelerometers, designed for mobile applications. It offers excellent power performance along with an embedded motion wake-up feature, Fast-mode I²C and up to 14-bit resolution. The KXTJ2 is delivered in a 2 x 2 x 0.9 mm, 12-pin, LGA package with an operating temperature range of -40°C to +85°C.

The KXTJ2 sensor offers improved shock, reflow, and temperature performance, and the ASIC has internal voltage regulators that allow operation from 1.8 V to 3.6 V within the specified product performance.



KXTJ2 Accelerometer

2x2x0.9mm Low-Power Accelerometer



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 | KXTJ2-1009 | CONDITION |
| Range | g | ±2.0, ±4.0, ±8.0 | User-selectable full-scale output range |
| Sensitivity ¹ | counts/g | 64, 32, 16 | 8-bit |
| | | 1024, 512, 256 | 12-bit |
| | | 1024 typical | 14-bit ² |
| 0g Offset vs. Temp | mg/°C | 0.2 | -40°C to +85°C |
| Sensitivity vs. Temp | %/°C | ±0.01 (xy) ±0.03 (z) typical | -40°C to +85°C |
| Mechanical Resonance ³ | Hz | 3500 (xy) 1800 (z) typical | -3dB |
| Output Data Rate (ODR) ⁴ | Hz | 0.781 min; 50 typical; 1600 max | |
| Bandwidth (-3dB) ⁵ | Hz | 800 | RES = 0 |
| | | ODR/2 | RES = 1 |
| Non-Linearity | % of FS | 1.0 typical | % of full scale output |
| Cross-axis Sensitivity | % | 2.0 typical | |
| I ² C Communication Rate | MHz | 3.4 max | |
| Power Supply | V | 2.6 typical | 1.8V – 3.6V |
| Current Consumption ⁶ | µA | 135 typical | High resolution (RES = 1) |
| | | 10 typical | Low resolution (RES = 0) |
| | | 2 typical | Standby |
| ENVIRONMENTAL SPECIFICATIONS | | | |
| PARAMETERS | UNITS | KXTJ2-1009 | 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 I2C.
- ² 14-bit Resolution is only available for registers 0x06h – 0x0Bh in the 8g Full Power mode.
- ³ Resonance as defined by the dampened mechanical sensor.
- ⁴ User selectable through I2C.
- ⁵ User selectable; dependent on ODR and RES.
- ⁶ Current varies with Output Data Rate (ODR).

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View KXTJ2-1009-FR on WIN SOURCE](#)

 [Kionix Inc. Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management