

# MMA6200Q Series XY-Axis Low g Acceleration Sensors

## **Primary Applications by Sensing Functions**

With five sensing functions, the MMA6200Q series acceleration sensor family is designed to detect tilt, motion, positioning, shock or vibration.

### > Tilt (Tilt Sensor)

- Camcorder stability
- Game controllers
- LCD projection
- PDA scrolling
- Physical therapy
- Robotics

### > Motion (Motion Sensor)

- Free-fall protection (portable hard disk drives)
- Motion control
- Pedometers
- Trailer brake controls

### > Positioning (Positioning Sensor)

- Anti-theft devices
- Back-up GPS
- Car navigation
- Map tracking

### > Shock (Shock Sensor)

- Black boxes/event recorders
- Fall log
- Hard disk drive protection
- Shipping/handling monitor

### > Vibration (Vibration Sensor)

- Acoustics
- Appliance balance and monitoring
- Seismic monitor
- Smart motor maintenance

## **Overview**

The MMA6200Q series XY-axis low g acceleration sensors are designed for end products or embedded systems that require measurement of small forces resulting from tilt, motion, positioning, shock or vibration. Target markets include appliance, consumer, industrial, medical, computer peripherals and the automotive aftermarket.

Sensing capabilities derive from MEMS (micro-electromechanical systems) technology. The acceleration sensor is surface micromachined. The g-cell is coupled with an ASIC, which provides the accelerometer with amplification, signal conditioning, low-pass filter and temperature compensation. This two-chip solution serves as a system-in-a-package (SIP).

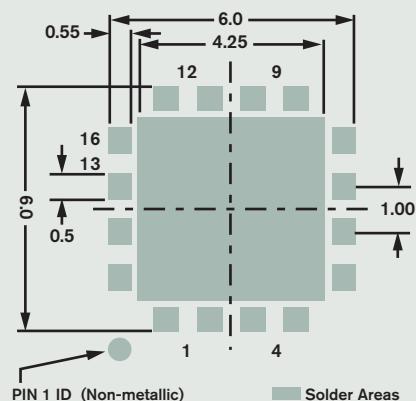
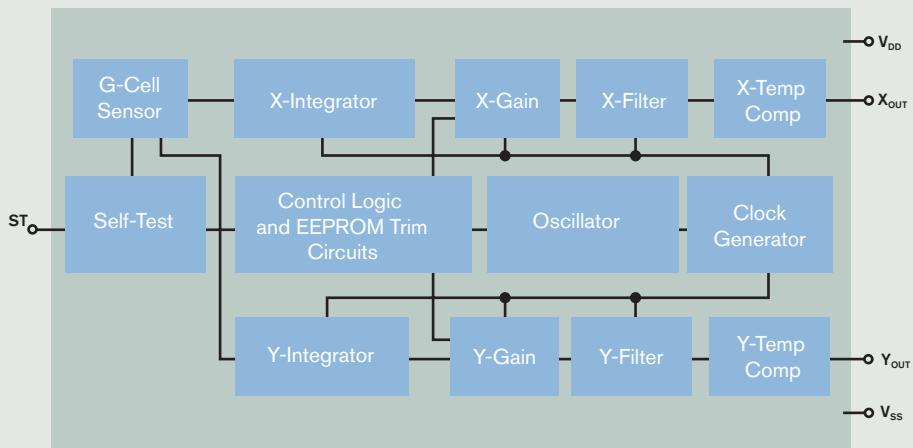
Freescale Semiconductor offers a broad portfolio of acceleration sensors for applications ranging from highly sensitive seismic detection to robust collision detection.

## **FREESCALE MMA6200Q SERIES XY-AXIS LOW g ACCELERATION SERIES**

Device	Acceleration (g)	Sensing Axis	Sensitivity (mV/g)	Frequency (Hz)	V <sub>DD</sub> Supply Voltage (Typ) (V)
MMA6260Q	±1.5	XY	800	50	3.3
MMA6261Q	±1.5	XY	800	300	3.3
MMA6262Q	±1.5	XY	800	150	3.3
MMA6263Q	±1.5	XY	800	900	3.3
MMA6231Q	±10	XY	120	300	3.3
MMA6233Q	±10	XY	120	900	3.3

**SENSOR DEVELOPMENT TOOLS**

Product	Description	Additional Information	Web URL
RD1986MMA6260Q	Three-Axis Acceleration Sensing Reference Design	Web site download of software	<a href="http://www.freescale.com/sensors">www.freescale.com/sensors</a>
KIT1925MMA6260Q	Evaluation Kit for 1.5g, 50 Hz XY-Axis Evaluation Board		<a href="http://www.freescale.com/sensors">www.freescale.com/sensors</a>
KIT1925MMA6261Q	Evaluation Kit for 1.5g, 300 Hz XY-Axis Evaluation Board		<a href="http://www.freescale.com/sensors">www.freescale.com/sensors</a>
KIT1925MMA6262Q	Evaluation Kit for 1.5g, 150 Hz XY-Axis Evaluation Board		<a href="http://www.freescale.com/sensors">www.freescale.com/sensors</a>
KIT1925MMA6263Q	Evaluation Kit for 1.5g, 900 Hz XY-Axis Evaluation Board		<a href="http://www.freescale.com/sensors">www.freescale.com/sensors</a>
KIT1925MMA6231Q	Evaluation Kit for 10g, 300 Hz XY-Axis Evaluation Board		<a href="http://www.freescale.com/sensors">www.freescale.com/sensors</a>
KIT1925MMA6233Q	Evaluation Kit for 10g, 900 Hz XY-Axis Evaluation Board		<a href="http://www.freescale.com/sensors">www.freescale.com/sensors</a>

**6 X 6 QFN FOOTPRINT**

**SIMPLIFIED ACCELEROMETER FUNCTIONAL BLOCK DIAGRAM**


**Learn More:** For more information about Freescale products, please visit [www.freescale.com](http://www.freescale.com).