da215

MiraMEMS 明皛传感

Intelligent, triaxial acceleration sensor

GENERAL DESCRIPTION

The da215 acceleration sensor is an ultra-low power high performance capacitive three-axis linear accelerometer developed by micro-machined technology. The sensor element is fabricated by single crystal silicon with DRIE process and is protected by hermetically sealed silicon cap from the environment.
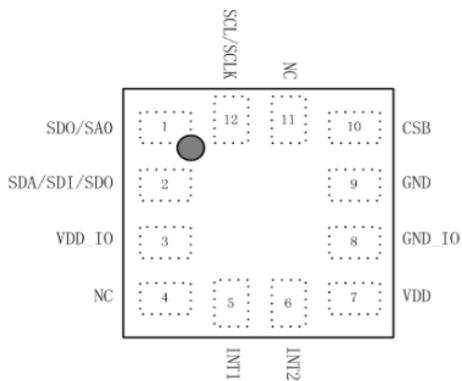
The da215 featuring 14-bit digital resolution. The device features user selectable full scale of ±2g/ ±4g/ ±8g/ ±16g measurement range with data output rate from 1Hz to 1000Hz with signal condition, active detection embedded.

TARGET APPLICATIONS

- ◆ User interface for mobile phone and PMP
- ◆ Display orientation
- ◆ User interface for mobile phone and PMP
- ◆ Gesture recognition
- ◆ Active monitoring
- ◆ Power management
- ◆ Vibration monitoring

KEY FEATURES

da215 Technical data	
Digital resolution	14-bit
Measurement ranges	±2g,±4g,±8g,±16g
Sensitivity	±2g: 4096LSB/g
	±4g: 2048LSB/g
	±8g: 1024LSB/g
	±16g: 512LSB/g
Zero-g offset	±70mg
Output data rate	1Hz to 1000Hz
Digital inputs/outputs	I2C/SPI interface
	2 interrupt pins
Supply voltage (VDD)	1.62V to 3.6V
I/0 supply voltage (VDDIO)	1.62V to 3.6V
Temperature range	-40°C to +85°C
LGA package	2x2x0.9mm LGA-12 package
Shock resistance	10000g×200us

da215

MiraMEMS 明皜传感

Top View

Pin configuration

TECHNICAL SPECIFICATIONS

Pin	Name	Description
1	SDO/SA0	SPI: serial data out I2C: I2C address select
2	SDA/SDI/SDO	Serial data I/O
3	VDD_IO	Power supply
4	NC	NO internal connection
5	INT1	Interrupt pin
6	INT2	Interrupt pin
7	VDD	Power supply
8	GND_IO	Ground
9	GND	Ground
10	CSB	Chip select for SPI
11	NC	NO internal connection
12	SCL/SCLK	Digital clock

SENSOR FEATURES

- **FIFO**

The da215 embeds 32-level of 12-bit data FIFO for each of the three output channels, X, Y and Z of the acceleration module that can be used to minimize host processor burden.
This buffer has four modes: bypass, FIFO, stream, and trigger mode.

- **Power consumption**

Normal mode
95 µA @ ODR = 125Hz
Suspend mode
1µA

- **Embedded intelligence**

New data interrupt
Active interrupt

SYSTEM COMPATIBILITY

The da215 has been designed for best possible fit into modern mobile consumer electronics and IOT devices.
Besides the very low height and lowest power consumption, the da215 has very wide ranges for VDD and VDDIO supply voltages. The da215 features I2C and SPI (3-wire/4-wire) digital, serial interfaces.