da380

MiraMEMS 明皓传感

Intelligent, triaxial acceleration sensor

GENERAL DESCRIPTION

The da380 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 da380 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.
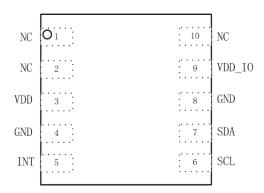
TARGET APPLICATIONS

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

KEY FEATURES

da380 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 interface
	1 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-10 package
Shock resistance	10000g×200us

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Top View

Pin configuration

SENSOR FEATURES

- **Power consumption**

  Normal mode

  180 μA @ ODR = 125Hz

  Low power mode

  40uA@ ODR = 62.5Hz&BW=500Hz

  Suspend mode

  0.7μA

- **Embedded intelligence**

  New data interrupt

  Active interrupt

TECHNICAL SPECIFICATIONS

Pin	Name	Description
1	NC	NO internal connection
2	NC	NO internal connection
3	VDD	Power supply
4	GND	Ground supply
5	INT	Interrupt pin
6	SCL	I2C serial clock
7	SDA	I2C serial data
8	GND	Ground supply
9	VDD_IO	Power supply for I/O pins
10	NC	NO internal connection

SYSTEM COMPATIBILITY

The da380 has been designed for best possible fit into driving recorder and GPS tracker.

Besides the very low height and lowest power consumption, the da380 has very wide ranges for VDD and VDDIO supply voltages. The da380 features I2C serial interfaces.

One independent and flexible interrupts provided greatly simplify the algorithm for various motion status detections.