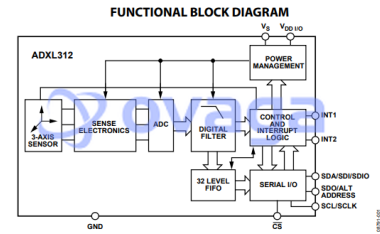


MEMS Accelerometer, Digital, Digital, X, Y, Z,  $\pm 1.5g \pm 3g \pm 6g \pm 12g$ , 2 V, 3.6 V, LFCSP



Images are for reference only

Manufacturers	<a href="#">Analog Devices, Inc</a>
Package/Case	LFCSP32
Product Type	Motion & Position Sensors
RoHS	Rohs
Lifecycle	

Please submit RFQ for ADXL312ACPZ or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

The ADXL312 is a small, thin, low power, 3-axis accelerometer with high resolution (13-bit) measurement up to  $\pm 12g$ . Digital output data is formatted as 16-bit twos complement and is accessible through either a serial port interface (SPI) (3- or 4-wire) or I2C digital interface.

The ADXL312 is well suited for car alarm or black box applications. It measures the static acceleration of gravity in tilt-sensing applications, as well as dynamic acceleration resulting from motion or shock. Its high resolution (2.9 mg/LSB) enables resolution of inclination changes of as little as  $0.25^\circ$ . A built-in FIFO facilitates using oversampling techniques to improve resolution to as little as  $0.05^\circ$  of inclination.

Several special sensing functions are provided. Activity and inactivity sensing detects the presence or absence of motion and whether the acceleration on any axis exceeds a user-set level. These functions can be mapped to interrupt output pins. An integrated 32 level FIFO can be used to store data to minimize host processor intervention.

Low power modes enable intelligent motion-based power management with threshold sensing and active acceleration measurement at extremely low power dissipation.

The ADXL312 is supplied in a small, thin  $5\text{ mm} \times 5\text{ mm} \times 1.45\text{ mm}$ , 32-lead, LFCSP package.

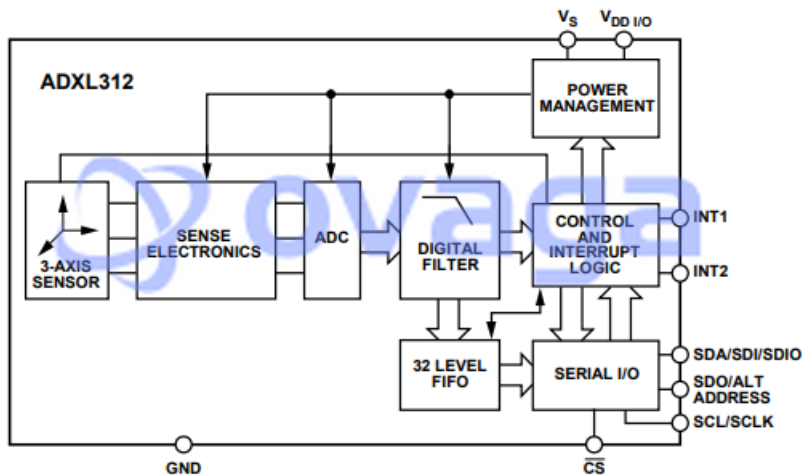
## Features

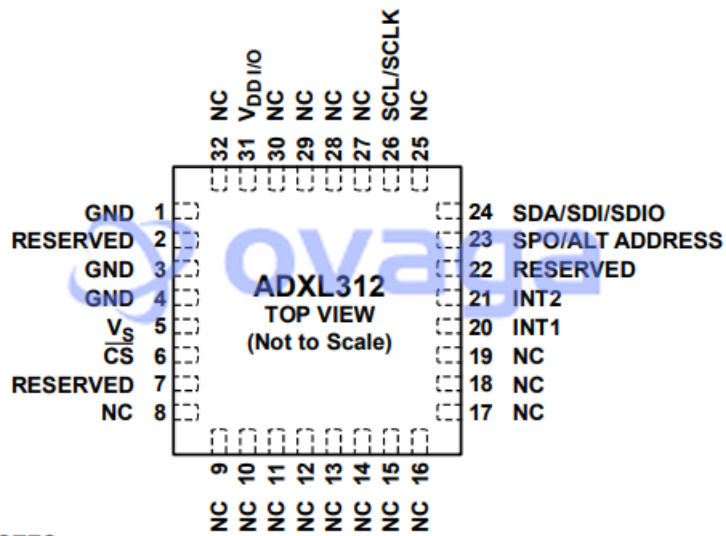
- Ultralow power: as low as 57  $\mu\text{A}$  in measurement mode and 0.1  $\mu\text{A}$  in standby mode at >
- Power consumption scales automatically with bandwidth
- User-selectable resolution
- Fixed 10-bit resolution
- Full resolution, where resolution increases with g range, up to 13-bit resolution at  $\pm 12$  g (maintaining 2.9 mg/LSB scale factor in all g ranges)
- Embedded FIFO technology minimizes host processor load
- Built-in motion detection functions for activity/inactivity monitoring
- Supply and I/O voltage range: 2.0 V to 3.6 V
- SPI (3- and 4-wire) and I2C digital interfaces
- Flexible interrupt modes mappable to either interrupt pin
- Measurement ranges selectable via serial command
- Bandwidth selectable via serial command
- Wide temperature range ( $-40$  to  $+105^\circ\text{C}$ )
- 10,000 g shock survival
- Pb free/RoHS compliant
- Small and thin: 5 mm  $\times$  5 mm  $\times$  1.45 mm LFCSP package
- Qualified for automotive applications

## Application

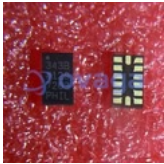
- Car alarm
- Hill start aid (HSA)
- Electronic parking brake
- Data recorder (black box)

**FUNCTIONAL BLOCK DIAGRAM**



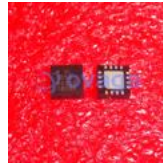


### Related Products



[ADXL343BCCZ](#)

Analog Devices, Inc  
LGA-14



[ADXL335BCPZ-RL7](#)

Analog Devices, Inc  
LFCSP16



[ADXL103CE](#)

Analog Devices, Inc  
CLCC-8



[ADIS16488BMLZ](#)

Analog Devices, Inc  
MSM24



[ADXRS642BBGZ](#)

Analog Devices, Inc  
CBGA-32



[ADXL357BEZ](#)

Analog Devices, Inc  
LCC-14



[ADXL346ACCZ-RL7](#)

Analog Devices, Inc  
LGA16



[ADXL345BCCZ-RL7](#)

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LGA-14