**BOSCH**

# A new dimension of acceleration

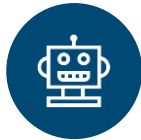## Easy-to-integrate accelerometer – BMA530

Stylish and minimalistic wearables offer little space for powerful components. The next-generation accelerometer with an advanced feature set is *world's smallest acceleration sensor* (1.2 x 0.8 x 0.55 mm³). It is especially designed for compact devices such as *wearables* and *toys* requiring less sensor size, especially lower height. BMA530 includes *integrated functionalities* like step-counter and generic interrupts for easy use.
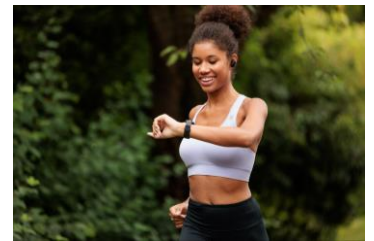
## Target applications

Wearables

Toys & Gadgets

Laptops


**Activity tracking**

## Benefits

### Easy to assemble
High level of integrability into compact devices such as wearables and toys due to the smallest size on the market.

### Integrated feature set
No upload of configuration files necessary through directly on the ASIC integrated functions, such as step counters and generic interrupts.


**Gesture recognition**

### Highly flexible
Due to different power modes and automatic power mode switching, the sensor ensures high flexibility.


**Freefall detection**
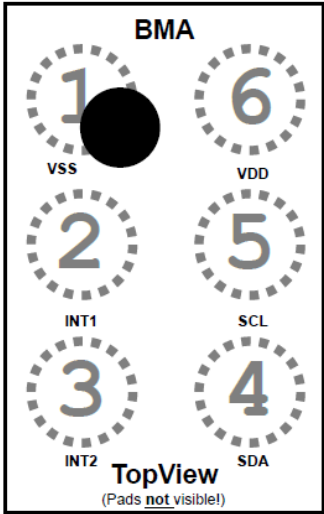
Doc.-Number: BST-BMA530-FL000-02 / Version_1.2_032024

# Technical features

## BMA530 technical data

| | |
|---|---|
| Package dimensions (typ.) | 1.2 x 0.8 x 0.55 mm³ Wafer level chip scale package |
| Digital resolution | 16 bit |
| Measurement ranges | ±2, ±4, ±8, ±16 g |
| Output data rate | ~1.56 Hz … 6.4 kHz |
| Offset soldered, over life | ±75 mg |
| TCO | ±0.5 mg/K |
| Sensitivity Error | 1% |
| Noise density | 120 µg/$\sqrt{}$Hz |
| Current consumption (high perf, continuous measurement) | 125 µA |
| Current consumption (low power@ 100 Hz) | 18 µA |
| Current consumption (suspend mode, data retention) | 4.75 µA |
| Interface | I³C, I²C and SPI 2 Interrupt Pins (I²C, I³C) 1 Interrupt Pin (3-wire SPI) |
| Power modes | High perf. mode, Low power mode (LPM) |
| FIFO | 1 KB (incl. FIFO full, FIFO watermark interrupt) |
| Interrupts | Data Ready interrupt 3 generic interrupts, incl. Any-/No-motion Step Counter Android Features |

## Pin configuration



| Pin | Name | Description |
|---|---|---|
| 1 | VSS | Ground (VSS=GND=GNDIO) |
| 2 | INT1 | Interrupt pin 1 (or Serial Data) |
| 3 | INT2 | Interrupt pin 2 (or Chip Select for SPI) |
| 4 | SDA | Serial Data |
| 5 | SCL | Serial Clock |
| 6 | VDD | Power supply analog and digital domain and digital I/O 1.62V … 3.63V (VDD=VDDIO) |

**Scan me for more product details!**

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