

# BMF055

## Custom programmable 9-axis motion sensor

Bosch Sensortec



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Invented for life

### BMF055: data sheet

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Technical reference code(s) 0 273 141 235

Notes Data in this document are subject to change without notice. Product photos and pictures are for illustration purposes only and may differ from the real product's appearance.

## 8. System setup

### 8.1 Internal sensor connection

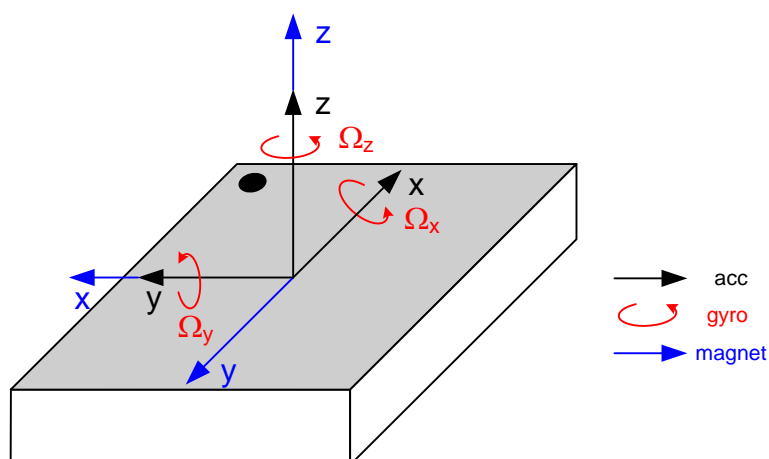
The sensors are connected to the MCU via SPI interface.

### 8.2 Programming and debug interface

The MCU can be programmed and debugged via Atmel debugging tools using the SWD interface.

### 8.3 Sensing Axes Orientation

The axis orientation is shown below.



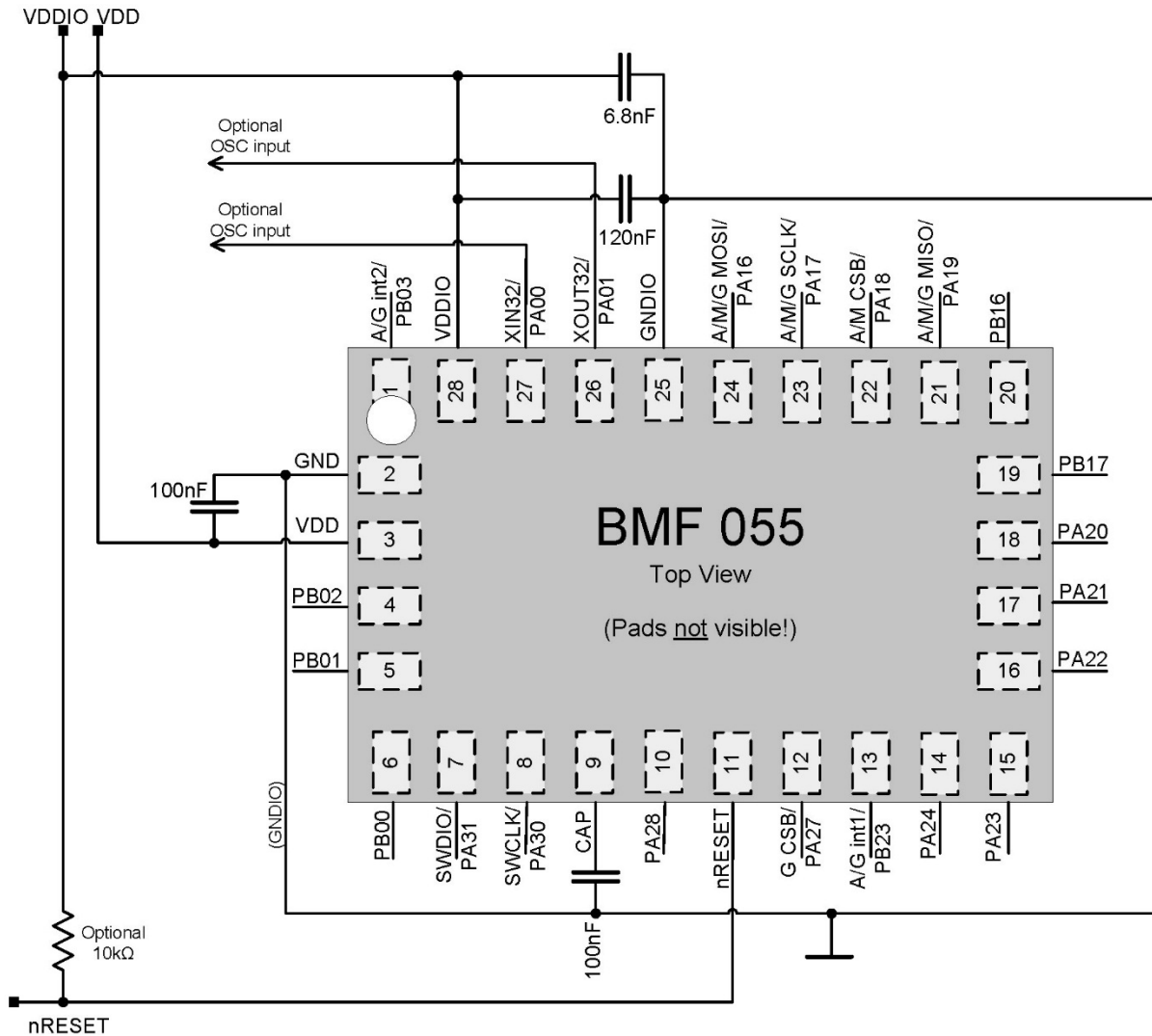
## 9. Pin-out and connection diagram

### 9.1 Pin description

If no port function is mentioned, the pin can be generally used as a general purpose IO. Details can be found in the Atmel SAM D20 datasheet. The pin names in this document are the same as in the microcontroller datasheet.

| Pin No. | Pin Name | Internal connection | Port Function                    |
|---------|----------|---------------------|----------------------------------|
| 1       | PB03     | X                   | Accelerometer / gyroscope INT2   |
| 2       | GND      | X                   | GND                              |
| 3       | VDD      | X                   | VDD                              |
| 4       | PB02     |                     |                                  |
| 5       | PB01     |                     |                                  |
| 6       | PB00     |                     |                                  |
| 7       | PA31     |                     | SWDIO                            |
| 8       | PA30     |                     | SWCLK                            |
| 9       | CAP      |                     | external capacitor               |
| 10      | PA28     |                     |                                  |
| 11      | RESETN   |                     | RESETN                           |
| 12      | PA27     | X                   | Gyroscope CSB                    |
| 13      | PB23     | X                   | Accelerometer / gyroscope INT1   |
| 14      | PA24     |                     |                                  |
| 15      | PA23     |                     |                                  |
| 16      | PA22     |                     |                                  |
| 17      | PA21     |                     |                                  |
| 18      | PA20     |                     |                                  |
| 19      | PB17     |                     |                                  |
| 20      | PB16     |                     |                                  |
| 21      | PA19     | X                   | Internal SPI: MISO               |
| 22      | PA18     | X                   | Accelerometer / magnetometer CSB |
| 23      | PA17     | X                   | Internal SPI: SCLK               |
| 24      | PA16     | X                   | Internal SPI: MOSI               |
| 25      | GNDIO    | X                   | GNDIO                            |
| 26      | PA01     |                     | optional: 32kHz Crystal Output   |
| 27      | PA00     |                     | optional: 32kHz Crystal Input    |
| 28      | VDDIO    | X                   | VDDIO                            |

## 9.2 Connection diagram



## 10. Package

### 10.1 Outline dimensions

The sensor package is a standard LGA package; dimensions are shown in the following diagram. Units are in mm. Note: Unless otherwise specified tolerance = decimal  $\pm 0.1$ mm.

