

ACCELEROMETER TINYSHIELD

ASD2511-R-A



DESCRIPTION

This TinyShield features the high performance and low power Bosch BMA250 3-axis accelerometer. The BMA250 allows measurement of accelerations in three perpendicular axes and thus senses tilt, motion, shock, and vibration in your projects. There is also an integrated temperature sensor built in.

Even though the BMA250 is designed to run at 1.8V – the Accelerometer TinyShield incorporates level shifters and a local power supply to ensure proper and safe operation over the entire TinyDuino operating voltage range up to 5V.

To learn more about the **TinyDuino Platform**, click [here](#)

<https://tinycircuits.com/pages/tinyduino-overview>

TECHNICAL DETAILS

To see what other TinyShields this will work with or conflict with, check out the **TinyShield Compatibility Matrix**

Bosch BMA250 Accelerometer Specs

- 3-axis (X, Y & Z)
- Digital resolution: 10bit
- Resolution: 3.9mg
- Measurement ranges: +-2g, +-4g, +-8g, +-16g
- Sensitivity: 2g: 256LSB/g, 4g: 128LSB/g, 8g: 64LSB/g, 16g: 32LSB/g
- Zero-g offset (over lifetime): +-80mg
- Bandwidths: 1000Hz... 8Hz
- Low Power: 139uA @2kHz data rate

TinyDuino Power Requirements

- Voltage: 3.0V - 5.5V
- Current: 139uA (Normal Mode). Due to the low current, this board can be run using the TinyDuino coin cell option

Pins Used

- A5/SCL - I2C Serial Clock line
- A4/SDA - I2C Serial Data line

Dimensions

- 20mm x 20mm (.787 inches x .787 inches)
- Max Height (from lower bottom TinyShield Connector to upper top TinyShield Connector): 5.11mm (0.201 inches)

- Weight: 1 gram (.04 ounces)
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NOTES

- You can also use this shield without the TinyDuino – there are 0.1" spaced connections for power, ground, and the two I2C signals along the side of the TinyShield to allow you to connect a different system. **Warning:** *Revision 4 boards have a mistake on the silkscreen, the pin marked VCC is actually SCL, the pin marked SCL is actually SDA, and the pin marked SDA is actually VCC. If you connect this up the way it is marked you will not damage the board.*
- Previous versions of this board will look a bit different and have the board number ASD2611-R, however they are functionally equivalent to this updated version and the accelerometer circuitry is identical. Earlier versions also had two interrupt pins broken out to solder points, these are not present on the current version of this board.