Low Cost, Single Axis, PSI5-Compatible Satellite Sensor

Data Sheet

ADXL151

FEATURES

User configurable sensor range
   ±120 *g*, ±240 *g*, and ±480 *g*
PSI5 communication protocol, V2.1 compliant
Asynchronous operation—PSI5-A10P-250[228]/1L
Synchronous operation—PSI5-P10P-500/3L and others
   Daisy-chain operation with bidirectional communication
   Backwards compliant with PSI5 V1.3
Selectable 10- or 16-bit sensor data
High accuracy interpolation routine
User-selectable, continuous auto-zero operation
Electromechanical sensor self-test
High resistance to electromagnetic interference (EMI)/
   radio frequency interference (RFI)
4.5 V to 16.5 V operation
Electronic serial number
Qualified for automotive applications

APPLICATIONS

Front impact crash sensing
Side impact crash sensing

GENERAL DESCRIPTION

The ADXL151 is a *g* range configurable single axis integrated satellite sensor, compliant to the PSI5 V2.1 specification. The ADXL151 enables low cost solutions for front and side impact airbag satellite sensor applications. Acceleration data is sent to the control module via a digital 2-wire current loop interface bus.

The *g* range of the sensor is configurable to provide full-scale acceleration measurements of ±120 *g*, ±240 *g*, or ±480 *g*. Additionally, the device can be configured to transmit data from multiple *g* ranges during predefined time slots, in accordance with the PSI5 specification. The device transmits 10- or 16-bit acceleration data to the control module, and can be configured to include either a 1-bit parity check, or a 3-bit cyclic redundancy check (CRC). The ADXL151 has a unique electronic serial number.

The ADXL151 is available in a 12-lead, 4 mm × 4 mm LFCSP package. The device is specified to operate over the full automotive temperature range, from −40°C to +125°C.
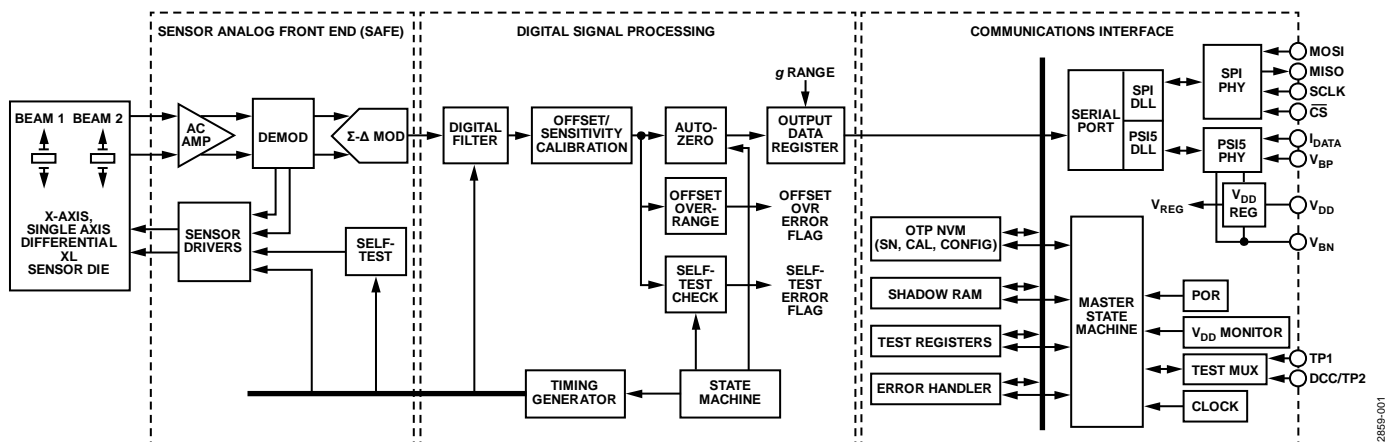
FUNCTIONAL BLOCK DIAGRAM

Figure 1.

For more information about the ADXL151, contact the Analog Devices, Inc., Customer Interaction Center at http://www.analog.com/technical_support to connect with a technical support specialist.

ADXL151* PRODUCT PAGE QUICK LINKS

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COMPARABLE PARTS 🔲

View a parametric search of comparable parts.

DOCUMENTATION 🔲

Data Sheet

- ADXL151: Low Cost, Single Axis, PSI5-Compatible Satellite Sensor Data Sheet

DESIGN RESOURCES 🔲

- ADXL151 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

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NOTES

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