

FEATURES

- High performance, triaxial digital output accelerometer**
±14.2 g full-scale range at 16-bit resolution (0.434 mg/LSB)
- 2 kHz output sample rate with optional data FIFOs**
- Programmable filter response**
20 Hz, 46 Hz, 92 Hz, 184 Hz
- Continuous electromechanical self-test**
- Additional key-on and on demand self-test routines**
- Temperature compensated, high precision zero-g bias and sensitivity performance**
- X-/Y-/Z-axis offset adjust**
- Low quiescent current draw**
- High linearity performance**
–40°C to +105°C temperature range
- Qualified for automotive applications**

APPLICATIONS

- Vehicle dynamic control (VDC)**
- Electronic stability program (ESP)**
- Electronic chassis control**
- Platform stabilization/leveling**

GENERAL DESCRIPTION

The ADXL700 device is a high precision, triaxial accelerometer designed for electronic stability control and other high performance applications. A built in temperature compensation routine ensures sensitivity stability to better than ±3% across the entire temperature range. The ADXL700 is designed with selectable –3 dB filter corner frequencies to satisfy a range of applications, and the 2 kHz output data rate allows sufficient oversampling of the acceleration information.

The acceleration data output from the device is a true 16-bit word and is contained in a 32-bit SPI transaction. The SPI interface contains additional fault detection bits and data formatting bits designed to assist high reliability applications. SPI communications are compatible up to 8 MHz. The 16-bit acceleration data-word offers a resolution of 0.434 mg/LSB for the ±14.2 g full-scale range of the device.

The ADXL700 is available in an SOIC package with an inverted paddle for improved EMI/RFI robustness. The ADXL700 operates at both 3.3 V and 5 V, and is specified to operate across the full automotive temperature range of –40°C to +105°C.

FUNCTIONAL BLOCK DIAGRAM

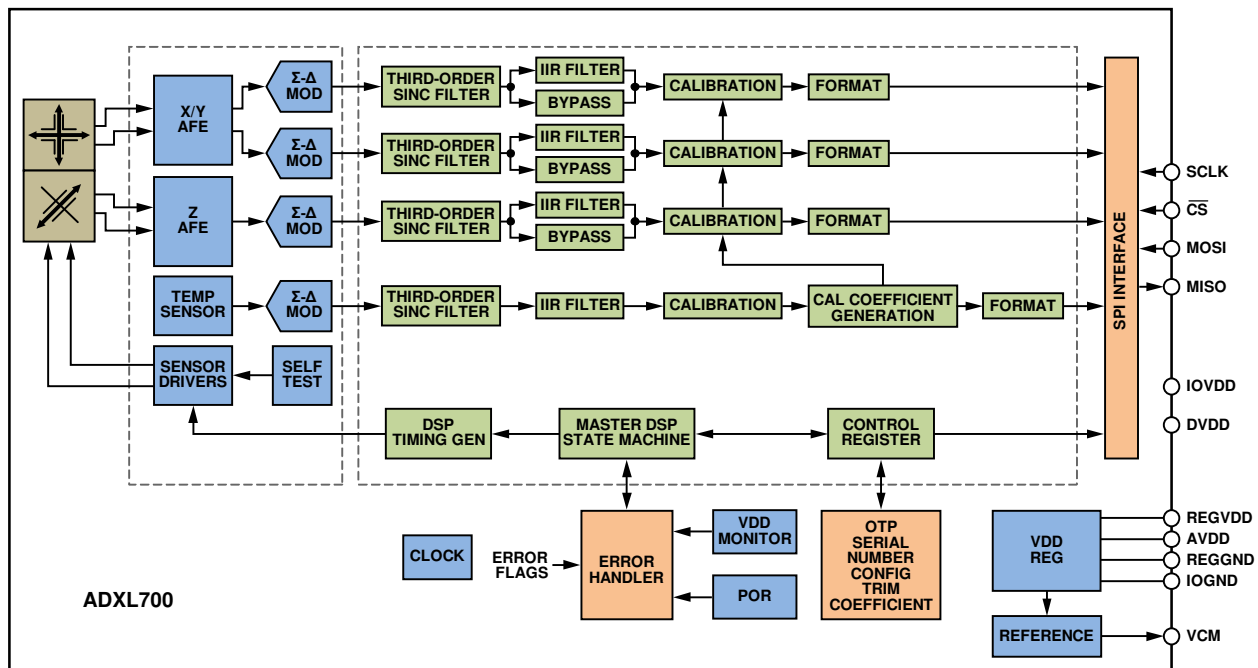


Figure 1.

For more information about the ADXL700, please contact the Analog Devices, Inc., Customer Interaction Center at http://www.analog.com/en/content/technical_support_page/fca.html to connect with a technical support specialist.

Rev. Sp0

Document Feedback

Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700 ©2015 Analog Devices, Inc. All rights reserved.
Technical Support www.analog.com

NOTES