

## FEATURES

- High performance, z-axis 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**
- Z-axis offset adjust**
- Low quiescent current draw**
- High linearity performance**
- Qualified for automotive applications**
- −40°C to +105°C temperature range**

## APPLICATIONS

- Vehicle rollover detection**
- Platform stabilization/leveling**

## GENERAL DESCRIPTION

The **ADXL701** device is a high precision, single z-axis accelerometer designed for vehicle rollover detection and other high performance applications. The **ADXL701** provides offset stability to better than ±500 mg and sensitivity stability to better than 5% across the entire temperature range. The **ADXL701** 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 **ADXL701** is available in an SOIC package with an inverted paddle for improved EMI/RFI robustness. The **ADXL701** operates at nominal power supplies of 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

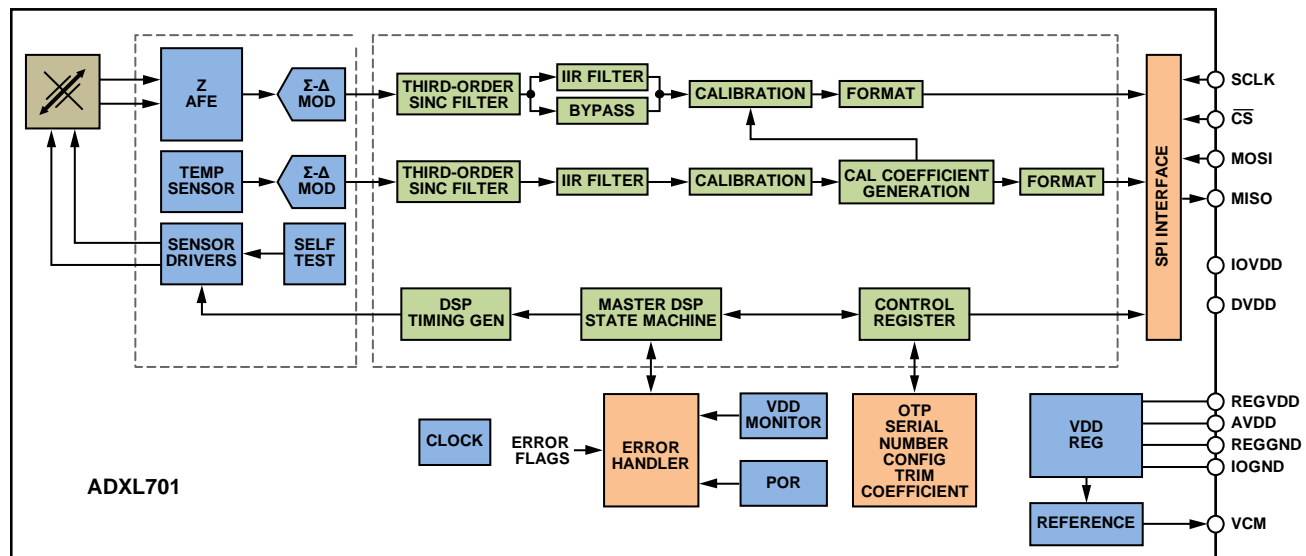


Figure 1.

For more information about the **ADXL701**, please contact the Analog Devices, Inc., *Customer Interaction Center* at [http://www.analog.com/en/content/technical\\_support\\_page/fca.html](http://www.analog.com/en/content/technical_support_page/fca.html) to connect with a technical support specialist.

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