High Performance, SPI Digital Output, Angular Rate Sensor

Data Sheet

ADXRS800

FEATURES

- **Excellent null offset stability over temperature**
- **High vibration rejection over a wide frequency range**
- **2000 *g* powered shock survivability**
- **SPI digital output with 16-bit data-word**
- **Low noise**
- **Continuous self-test**
- **Fail-safe functions**
- **Temperature sensor**
- **3.3 V and 5 V operation**
- **–40°C to +105°C operation**
- **Small, low-profile industry standard SOIC package provides yaw rate (Z-axis) response**
- **Innovative ceramic vertical mount package (VMP) provides pitch and roll rate response**
- **Qualified for automotive applications**

APPLICATIONS

- **Electronic stability control**
- **High performance platform stabilization**

GENERAL DESCRIPTION

The ADXRS800 is an angular rate sensor (gyroscope) intended for automotive electronic stability control, vehicle rollover detection, and other high performance applications. An advanced, differential, quad-sensor design rejects the influence of linear acceleration, enabling the ADXRS800 to operate in exceedingly harsh environments where shock and vibration are present.

The ADXRS800 uses an internal, continuous self-test architecture. The integrity of the electromechanical system is checked by applying a high frequency electrostatic force to the sense structure to generate a rate signal that can be differentiated from the baseband rate data and internally analyzed.

The ADXRS800 is capable of sensing an angular rate of up to ±300°/sec. Angular rate data is presented as a 16-bit word, as part of a 32-bit SPI message.

The ADXRS800 is available in a cavity plastic SOIC-16 and an SMT-compatible vertical mount package and is capable of operating across both a wide voltage range (3.3 V to 5 V) and temperature range (−40°C to +105°C).

FUNCTIONAL BLOCK DIAGRAM

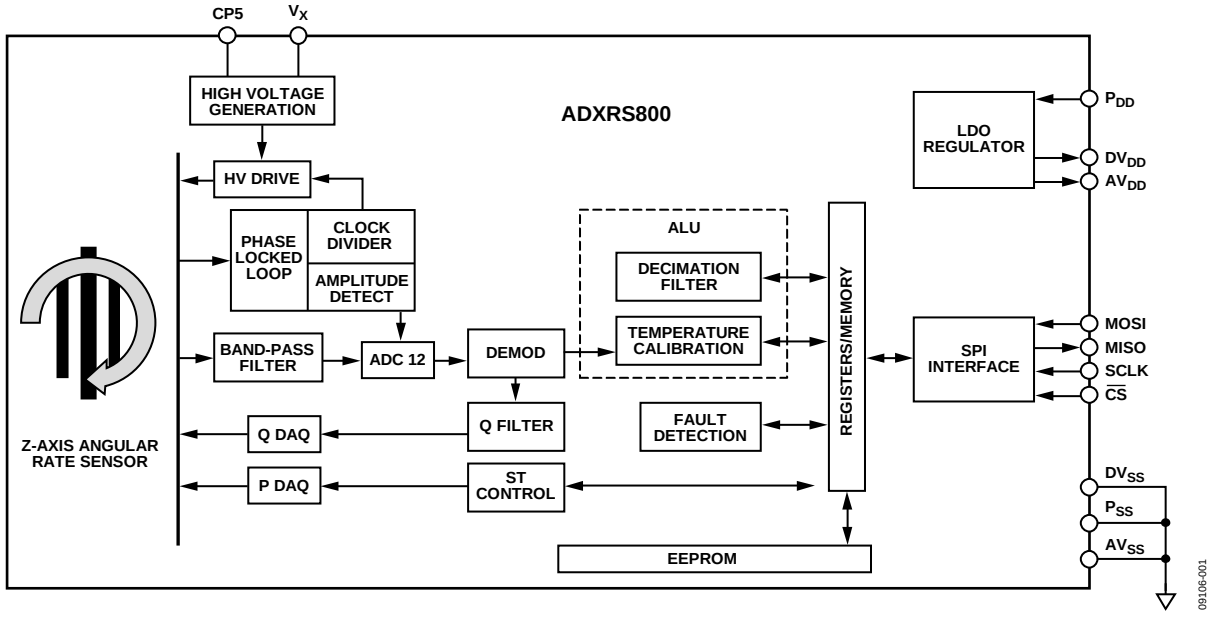

Figure 1.

For more information about the ADXRS800, 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. SpC **Document Feedback**

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NOTES

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