High Performance, SPI Digital Output, Angular Rate Sensor

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

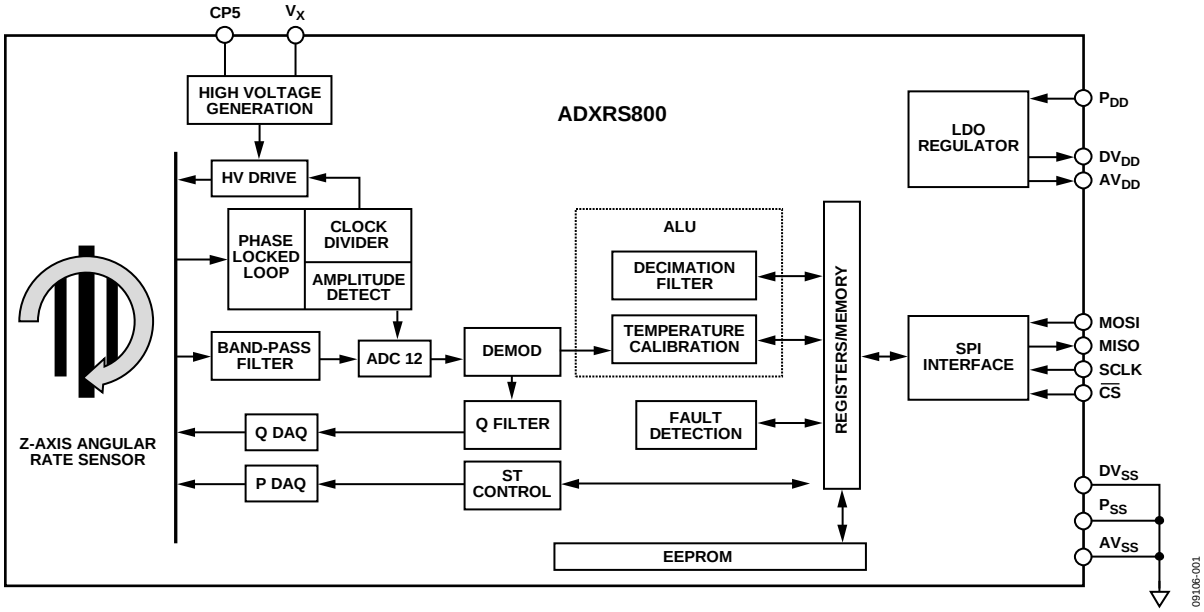

Figure 1.

For more information about the ADXRS800, 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.

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NOTES

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