

# 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  $\pm 300^{\circ}$ /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 ( $-40^{\circ}$ C to  $+105^{\circ}$ C).

## **FUNCTIONAL BLOCK DIAGRAM**

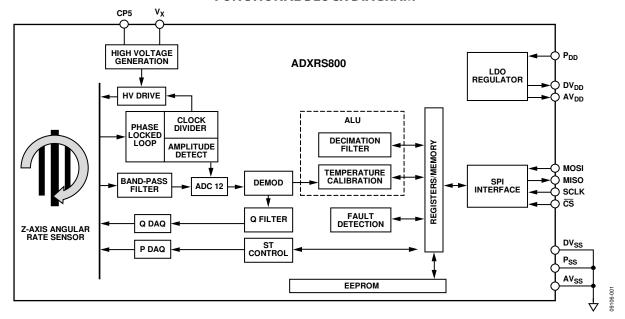


Figure 1.

For more information about the ADXRS800, contact the Analog Devices, Inc., Customer Interaction Center at <a href="http://www.analog.com/en/content/technical\_support\_page/fca.html">http://www.analog.com/en/content/technical\_support\_page/fca.html</a> to connect with a technical support specialist.

ADXRS800 Data Sheet

# **NOTES**

