

Evaluating the Fast Starting, $\pm 20,000^\circ/\text{sec}$ Vibration Rejecting Yaw Rate Gyroscope with Analog Output

GENERAL DESCRIPTION

The [EVAL-ADXRS649Z](#) is a simple evaluation board that allows quick evaluation of the performance of the [ADXRS649](#) $\pm 20,000^\circ/\text{sec}$ yaw rate gyroscope. No additional external components are required for operation. The [EVAL-ADXRS649Z](#) has a 20-lead, dual in-line (0.3 inch width \times 0.1 inch pin spacing) interface that allows easy prototyping of products without BGA soldering.

CIRCUIT DESCRIPTION

The schematic of the [EVAL-ADXRS649Z](#) is shown in Figure 1. The numbers that appear in the squares correspond to the pins on the evaluation board. This evaluation board implements a typical application of the [ADXRS649](#).

The analog and power grounds (AGND and PGND) have separate power planes in this evaluation board to accommodate application-specific grounding schemes. If the user requires only a single ground plane, these nodes can be shorted together. Both AGND and PGND must be grounded for the evaluation board to operate properly.

Note that the analog supply voltage and charge pump supply voltage (V_{DD} and V_{CC}) are not connected to each other on the [EVAL-ADXRS649Z](#) and that the user can connect these as appropriate to their application.

The layout of the [EVAL-ADXRS649Z](#) is shown in Figure 2, and the parts list for the [EVAL-ADXRS649Z](#) is shown in Table 1. As delivered, the [EVAL-ADXRS649Z](#) is set to a 10 Hz bandwidth ($C_{OUT} = 100 \text{ nF}$). The user can add an external capacitor to further reduce the bandwidth and improve the noise floor.

SPECIAL NOTES ON HANDLING

Note that the [EVAL-ADXRS649Z](#) is not reverse polarity protected. Reversing the power supply or applying inappropriate voltages to any pin (outside the absolute maximum ratings listed in the [ADXRS649](#) data sheet) may damage the [EVAL-ADXRS649Z](#).

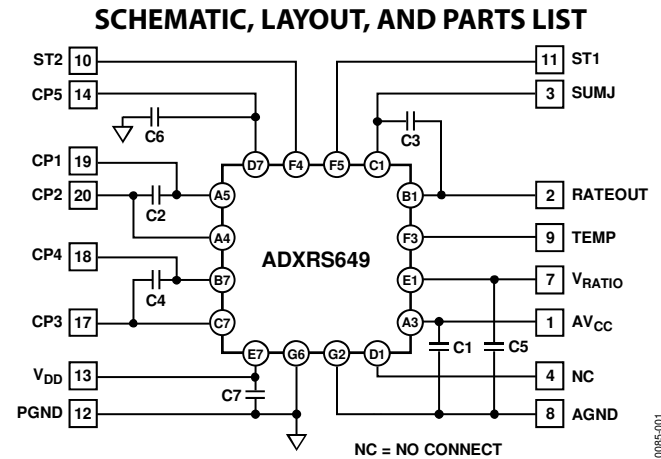


Figure 1. [EVAL-ADXRS649Z](#) Schematic

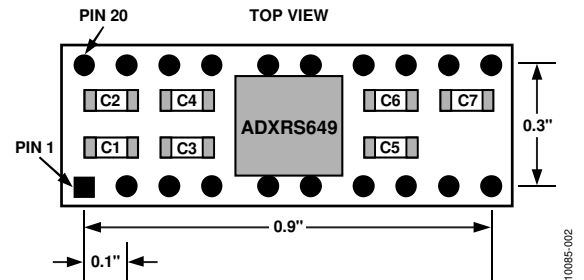


Figure 2. [EVAL-ADXRS649Z](#) Layout

Table 1. [EVAL-ADXRS649Z](#) Parts List

Component	Value (nF)	Rating
C1	100	50 V
C2	22	16 V
C3	100	50 V
C4	22	16 V
C5	100	50 V
C6	100	50 V
C7	100	50 V

NOTES

**ESD Caution**

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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