

Evaluating the ADXL314 ± 200 g Range, 3-Axis Digital Accelerometer

FEATURES

- ▶ 2 sets of spaced vias for population of 5-pin headers
- ▶ Easily attached to prototyping board or PCB
- ▶ Small size and board stiffness minimize impact on the system and acceleration measurement

EVALUATION KIT CONTENTS

- ▶ EVAL-ADXL314Z evaluation board
- ▶ 10-pin Harwin connector, M80-8541042

ONLINE RESOURCES

- ▶ [ADXL314 data sheet](#)
- ▶ [ADXL314 Quick Start User Guide](#)

EVALUATION BOARD PHOTOGRAPH

GENERAL DESCRIPTION

The EVAL-ADXL314Z is a simple evaluation board that allows quick evaluation of the performance of the ADXL314, 3-axis digital accelerometer. The EVAL-ADXL314Z is ideal for evaluation of the ADXL314 in an existing system because the stiffness and the small size of the EVAL-ADXL314Z minimizes the effect of the board on both the system and acceleration measurements.

For full details on the ADXL314, see the ADXL314 data sheet, which should be consulted in conjunction with this user guide when using the EVAL-ADXL314Z evaluation board.

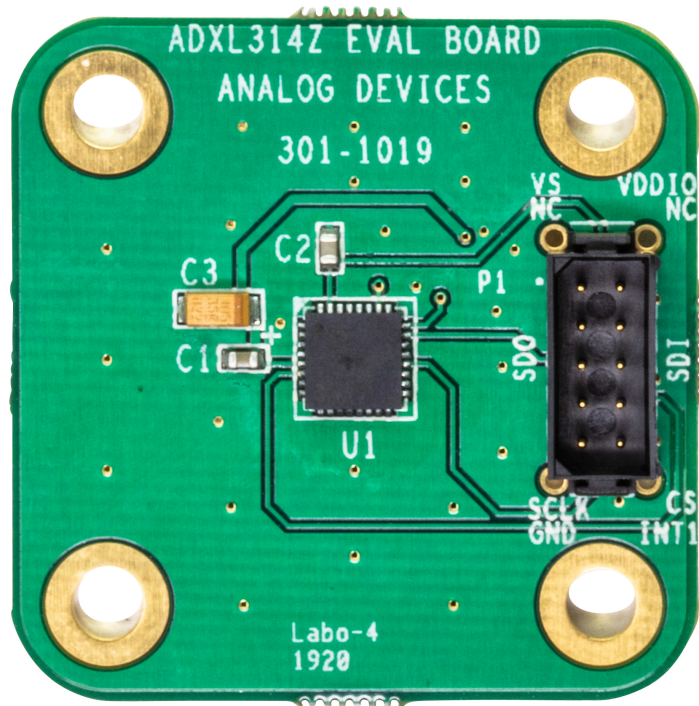


Figure 1. EVAL-ADXL314Z Evaluation Board Photograph

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REVISION HISTORY**5/2022—Revision 0: Initial Version**

EVALUATION BOARD HARDWARE

The EVAL-ADXL314Z includes a 10-pin Harwin connector that provides robustness for the more demanding scenarios and access to all power and signal lines. Four holes are provided that are set at 2.54 mm × 2.54 mm at the corners of the printed circuit board (PCB) for mechanical attachment of the EVAL-ADXL314Z to the application fixture. An external host processor is required for communication to the device.

The dimensions of the EVAL-ADXL314Z are 35.5 mm × 35.5 mm.

EVALUATION BOARD CIRCUITRY

The EVAL-ADXL314Z is equipped with three factory installed capacitors for bypass: two 0.1 μF capacitors (C1 and C2) and a

1.0 μF capacitor (C3). C2 and C3 are V_S bypass capacitors for reducing analog supply noise and C1 (located between $V_{DD I/O}$ and GND) is for reducing digital clocking noise. The schematic of the EVAL-ADXL314Z is shown in Figure 2. The 10-pin Harwin mating female connector is M80-8881005, and the preassembled cable part number is M80C108373C. These two components are not included in the evaluation kit.

See the ADXL314 data sheet for information on configuring the accelerometer following its connection to the application host processor.

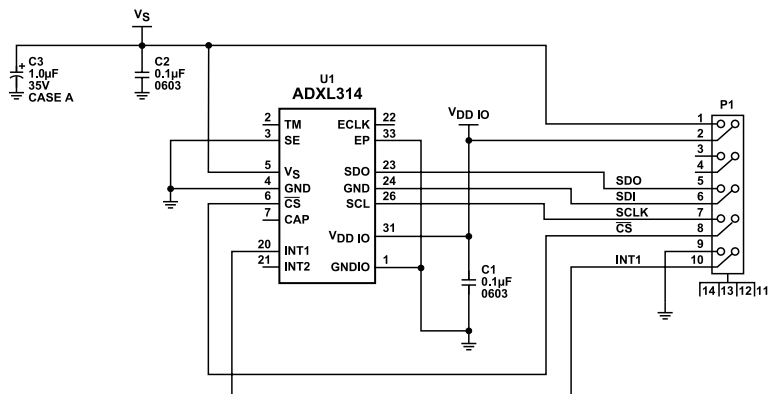


Figure 2. EVAL-ADXL314Z Schematic

EVALUATION BOARD HARDWARE

HANDLING CONSIDERATIONS

The EVAL-ADXL314Z is not reverse polarity protected. Reversing the V_S or $V_{DD/I/O}$ supply and GND pins can cause damage to the [ADXL314](#). Dropping the EVAL-ADXL314Z on a hard surface can generate several thousand g of acceleration, which can exceed the absolute maximum ratings data sheet limits. See the ADXL314 data sheet for more information.

ORDERING INFORMATION

BILL OF MATERIALS

Table 1. Bill of Materials

Quantity	Reference Designator	Description	Manufacturer	Part Number
1	U1	±200 g range, 3-axis digital accelerometer, 32-lead LFCSP	Analog Devices, Inc.	ADXL314WACPZ
2	C1, C2	0.1 µF ceramic capacitors, 50 V, 10%, X7R, 0603	Cal-Chip	GMC10X7R104K50NT
1	C3	1.0 µF tantalum capacitor, 16 V, 10%, Size A	Cal-Chip	TCKIC105ATLF
1	P1	Header, male shrouded, 2 x 5 (10 positions), 2 mm pitch, thru hole	Harwin	M80-8631042

**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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