

EVAL-ADXL354BZ: Ultralow Power, $\pm 2\text{ g}/\pm 4\text{ g}$ Analog Accelerometer Breakout Board
EVAL-ADXL354CZ: Ultralow Power, $\pm 2\text{ g}/\pm 8\text{ g}$ Analog Accelerometer Breakout Board
EVAL-ADXL355Z: Ultralow Power, $\pm 2\text{ g}/\pm 4/\pm 8\text{ g}$ Digital Accelerometer Breakout Board

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 measurements

EQUIPMENT NEEDED

External host processor

DOCUMENTS NEEDED

- [ADXL354 data sheet](#)
- [ADXL355 data sheet](#)

GENERAL DESCRIPTION

The [EVAL-ADXL354BZ](#), [EVAL-ADXL354CZ](#) and [EVAL-ADXL355Z](#) are simple evaluation boards that allow quick evaluation of the performance of the [ADXL354](#) and the [ADXL355](#) ultralow power, 3-axis, MEMS accelerometer. The ADXL354BZ is an analog output supporting $\pm 2\text{ g}$ or $\pm 4\text{ g}$, the ADXL354CZ is an analog output supporting $\pm 2\text{ g}$ or $\pm 8\text{ g}$ and the ADXL355Z is a digital output supporting $\pm 2\text{ g}$, $\pm 4\text{ g}$ or $\pm 8\text{ g}$ accelerometer. These evaluation boards are ideal for evaluation of the [ADXL354](#) and [ADXL355](#) in an existing system because the stiffness and the small size of the evaluation board minimize the effect of the board on both the system and acceleration measurements.

PRINTED CIRCUIT BOARD LAYOUT

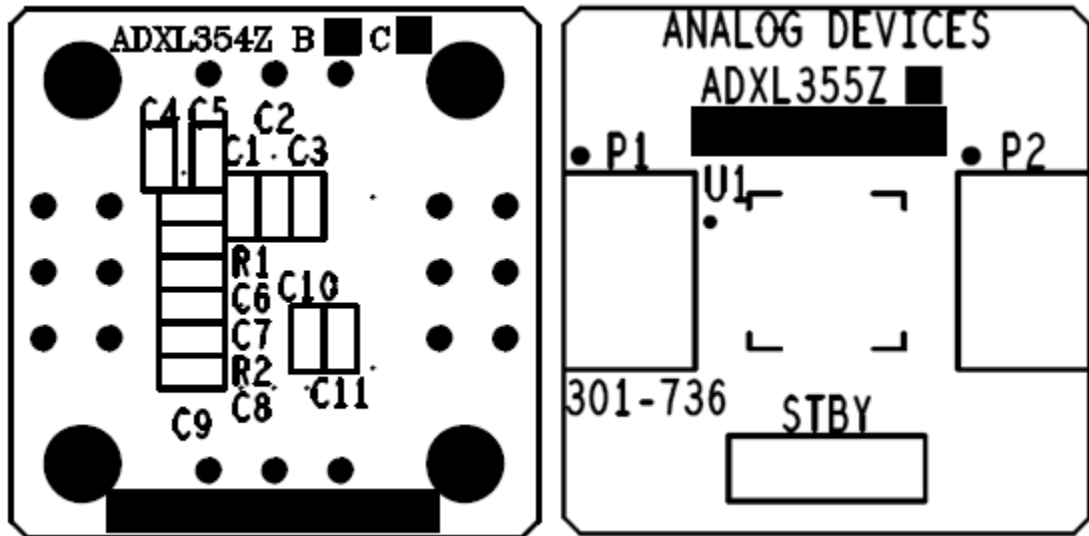


Figure 1. ADXL354 and ADXL355 Breakout Evaluation Boards

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REVISION HISTORY

7/2016—Revision 0: Initial Version

EVALUATION BOARD HARDWARE

The EVAL-ADXL354BZ, EVAL-ADXL354CZ and the EVAL-ADXL355Z (referred to collectively herein as the breakout boards) allow the user to access the individual connections of the ADXL354 and ADXL355. Each of the breakout boards include decoupling capacitors for supplies, a few discrete resistors to provide isolation on the V1p8ana and V1p8dig pins, and two 6 pin headers. Refer to the respective datasheet for more detail on specific pin definitions. The power supplies for the device is decoupled using multiple 0.1uF Ceramic (0603) capacitors.

The ADXL354 boards have capacitors on each axis output to set the output low pass filter and two 3 position jumpers to configure Range and Mode. The two 6 pin headers provide access to all other pins. Header P1 provides access to VDDIO, VDD, Common, Xout, Yout and Zout as show in the figure below. Header P2 provides access to V1p8ana, V1p8dig, TEMP, ST1, ST2 and Common.

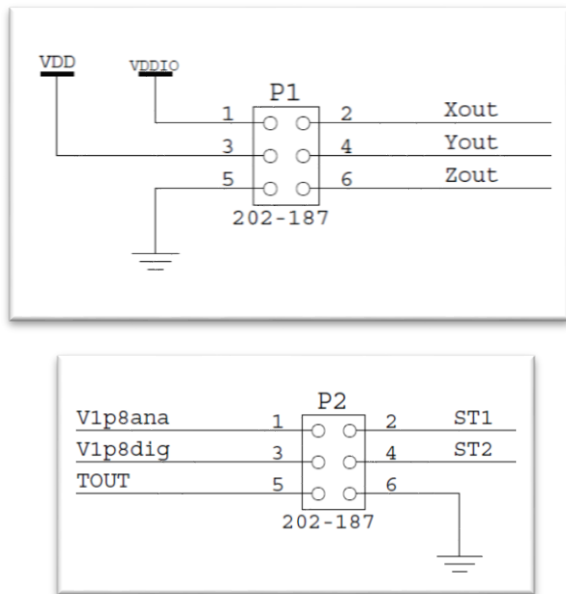


Figure 2. EVAL-ADXL354BZ/CZ pin out for P1 header (top) and P2 header (bottom).

The ADXL355 board has a 3 position jumpers to configure standby through the STBY pin. The ADXL355 board uses two 6 pin headers to provide access to all pins. Header P1 provides access to VDDIO, VDD, Common, INT1, INT2 and DRDY as show in the figure below. Header P2 provides access to V1p8ana, V1p8dig, MISO/SDA, CS/SCL, SCLK/GND and MOSI/SDA.

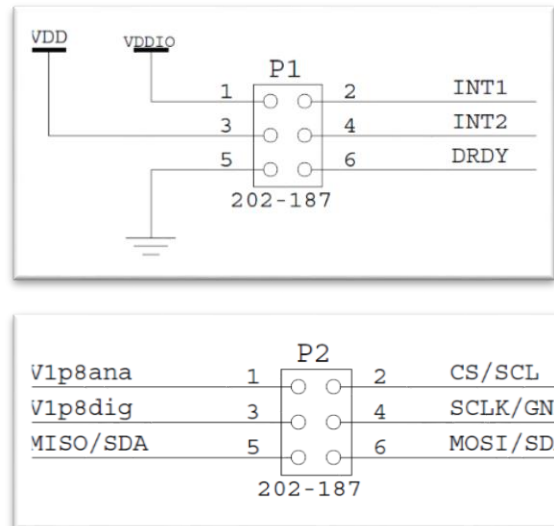


Figure 3. EVAL-ADXL355 pin out for P1 header (top) and P2 header (bottom).

The vias or headers allow the evaluation board to be attached either to a prototyping board (breadboard) or to a printed circuit board (PCB) in an existing system. Four holes are provided in the corners of the board for mechanical attachment of the breakout board in many application. An external host processor is required for communication to the digital part. The dimensions of the breakout boards are 0.8” × 0.8”.

CIRCUIT DESCRIPTION

The PCB layout of the [EVAL-ADXL354Z](#) and the [EVAL-ADXL355Z](#) are shown in Figure 1. The [ADXL354](#) and [ADXL355](#) each have 2 mode by which they can be powered, by internal LDO or external (user supplied) 1.8 V regulated supplies. Refer to the datasheet for more information.

HANDLING CONSIDERATIONS

The [EVAL-ADXL35xZ](#) is not reverse polarity protected. Reversing the supply and Common pins can cause damage to the [ADXL354/ADXL355](#).

Dropping the breakout board on a hard surface can generate several thousand g of acceleration, which may exceed the data sheet absolute maximum limits. See the [ADXL354/ADXL355](#) datasheet for more information.

ORDERING INFORMATION

BILL OF MATERIALS

Table 1. BOM for EVAL-ADXL354BZ and EVAL-ADXL354CZ boards

Qty	Reference Designator	Description	Size	Manufacturer	Part Number
1	U1	High Performance 3-Axis MEMS Accelerometer	LCC-14	ADI	ADXL354
11	C1-C11	Capacitor - Ceramic - 0.1uF - 50V - 10% -X7R	0603	Cal-Chip	GMC10X7R104K50NTLF
2	R1,R2	Resistor - 1K00 - 1/10W - 1%	0603	Cal-Chip	CR0603F1001T1LF
2	MODE, RANGE	Jumper - 3 positions	Thru-Hole	Prolex	2556P03UA00
2	P1,P2 (DNI)	Header Male Non-Shrouded 2x3 0.1" Spacing	Thru-Hole	FCI	67996-206HLF
1	PCB	ADXL354Z Rev.2		Intempco	

Table 2. BOM for EVAL-ADXL355Z board

Qty	Reference Designator	Description	Size	Manufacturer	Part Number
1	U1	High Performance 3-Axis MEMS Accelerometer	LCC-14	ADI	ADXL355
11	C1-C11	Capacitor - Ceramic - 0.1uF - 50V - 10% -X7R	0603	Cal-Chip	GMC10X7R104K50NTLF
2	R1,R2	Resistor - 1K00 - 1/10W - 1%	0603	Cal-Chip	CR0603F1001T1LF
1	STBY	Jumper - 3 positions	Thru-Hole	Prolex	2556P03UA00
2	P1,P2 (DNI)	Header Male Non-Shrouded 2x3 0.1" Spacing	Thru-Hole	FCI	67996-206HLF
1	PCB	ADXL355Z Rev.2		Intempco	



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.

RELATED LINKS

Resource	Description
ADXL354/ADXL355	Product page, ADXL354/ADXL355

NOTES



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