



Product/Process Change Notice - PCN 25_0025 Rev. A

Analog Devices, Inc. One Analog Way, Wilmington, MA 01887, USA

This notice is to inform you of a change that will be made to certain ADI products (see Appendix A) that you may have purchased in the last 2 years. An acceptance or concern response should be submitted to ADI promptly. Any requests for samples of changed material or additional information must be made within 30 days of the notification. In accordance with JEDEC Standard 046, customers should acknowledge receipt of the PCN within 30 days of the PCN delivery. ADI contact information is listed below. Note: Revised fields are indicated by a red field name. See Appendix B for revision history.

Lack of acknowledgment of the PCN within 30 days constitutes acceptance of the change. After the acknowledgment, a lack of additional requests within 90 days constitutes acceptance of the change.

Note: Revised fields are indicated by a red field name. See Appendix B for revision history.

PCN Title:	ADXL380/ADXL382 Die and Data Sheet Revision
Publication Date:	08-Apr-2026
Effectivity Date:	27-Feb-2026 <i>(the earliest date that a customer could expect to receive changed material)</i>
Revision Description:	Add the effective date code.

Description Of Change:

1. Die Revision:

- The new revision includes the improvements on multiple features, including interpolation, SPI chattering, gain scaler overflow, consistent over-range threshold on ""xl380 + double speed mode + 16 gee" mode, sensor robustness.

2. Test Change:

- Wider coverage and test time reduction.

3. Data Sheet Specification Changes:

- Improved temperature range from 85°C to 125°C for ADXL380.

- Improved error sensitivity at 25°C from 3.1 to 1.8% on Z-axis for ADXL382.

- Updated 0g Offset vs Temperature from 2.0 to 2.3mg/°C for ADXL382.

- Updated bias repeatability:

For ADXL380: from 100ug to 110mg on X and Y-axis and from 120ug to 60mg on Z-axis.

For ADXL382: from 220ug to 230mg on X and Y-axis and from 400ug to 90mg on Z-axis.

- Updated Velocity Random Walk from 10 to 14 mm/sec/vhr on X and Y-axis and from 12 to 17 mm/sec/vhr on Z-axis for ADXL380.

- Added option to switch CS from pin5 to pin12.

- Renamed registers 0x04 to 0x0A.

- Update PART_ID_REV_ID from C2 to C3.

Reason For Change:

The new sensor revision is derived from the released version, with changes on enhancing sensor robustness and functionality. The Data Sheet has been updated to accurately reflect the device's enhanced capabilities.

Impact of the change (positive or negative) on fit, form, function & reliability:

These changes maintain fit, form, and reliability while improving functionality.

Product Identification: *(this section will describe how to identify the changed material)*

Products shipped after the effectivity date can be identified by date code 2609 and later.

Summary of Supporting Information:

Qualification has been performed per Industry Standard Test Methods. See attached Qualification Results.

Data Sheet Changes are documented in Product Data Sheets Revision A.

Supporting Documents:

Attachment 1: Type: Qualification Results Summary

ADI_PCN_25_0025_Rev_A_Qualification Results ADXL380_ADXL382.pdf

Note: If applicable, the device material declaration will be updated due to material change.

ADI Contact Information:

For questions on this PCN, please send an email to the regional contacts below or contact your local ADI sales representatives.

Americas:

Europe:

Japan:

Korea:

Rest of Asia:

PCN_Americas@analog.com PCN_Europe@analog.com PCN_Japan@analog.com PCN_Korea@analog.com PCN_ROA@analog.com

Appendix A - Affected ADI Models:

Existing Parts - Product Family / Model Number (8)

ADXL380 / ADXL380-1BCCZ-RL	ADXL380 / ADXL380-1BCCZ-RL7	ADXL380 / ADXL380-2BCCZ-RL	ADXL380 / ADXL380-2BCCZ-RL7	ADXL382 / ADXL382-1BCCZ-RL
ADXL382 / ADXL382-1BCCZ-RL7	ADXL382 / ADXL382-2BCCZ-RL	ADXL382 / ADXL382-2BCCZ-RL7		

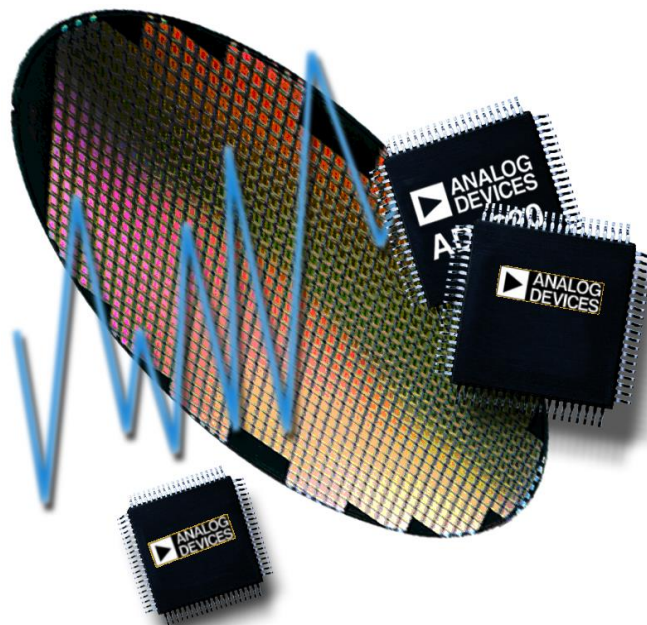
Appendix B - Revision History:

Rev	Publish Date	Effectivity Date	Rev Description
Rev. -	25-Nov-2025	27-Feb-2026	Initial Release.
Rev. A	08-Apr-2026	27-Feb-2026	Add the effective date code.



Analog Devices, Inc. PCN Material Report (Proprietary Information)

Existing Material		Material Added		Material Removed	
GENERICNUMBER	MATERIALNUMBER	GENERICNUMBER	MATERIALNUMBER	GENERICNUMBER	MATERIALNUMBER
ADXL380	ADXL380-1BCCZ-RL				
ADXL380	ADXL380-1BCCZ-RL7				
ADXL380	ADXL380-2BCCZ-RL				
ADXL380	ADXL380-2BCCZ-RL7				
ADXL382	ADXL382-1BCCZ-RL				
ADXL382	ADXL382-1BCCZ-RL7				
ADXL382	ADXL382-2BCCZ-RL				
ADXL382	ADXL382-2BCCZ-RL7				



Reliability Report

Report Title:	ADXL380/382 New Product Qualification
Report Number:	21521
Revision:	B
Date:	07 November 2025

Summary

This report documents the successful completion of the reliability qualification requirements for the release of the ADXL380, ADXL382 product in a 14-LGA package. Revision B of this document includes an ASIC die revision from TMTA79 A to TMUC07 C per PCN 25_0025.

The ADXL380 is a low noise density, low power, 3-axis accelerometer with selectable measurement ranges. The ADXL380 supports the ± 4 g, ± 8 g, and ± 16 g range options.

The ADXL382 is a low noise density, low power, 3-axis accelerometer with selectable measurement ranges. The ADXL382 supports ± 15 g, ± 30 g, and ± 60 g range options.

Multiprotocol serial interfaces are supported such as SPI or I2C.

Die/Fab Product Characteristics

Table 1.1: Die/Fab Product Characteristics - 0.18um CMOS

Product Characteristics	Product(s) to be qualified	Product(s) used for Substitution Data					
Generic/Root Part #	ADXL380/ ADXL382	ADXL380/ ADXL382	ADXL318/ ADXL319	ADUX1050	ADP1762	ADPD5000	ADXL351
Die Id	TMUC07 C	TMTA79 A	TMUC07 C	TMFU86	TMHJ03/A	TMKI91/A	TMLB22 A
Die Size (mm)	2.25 x 2.4	2.25 x 2.4	2.25 x 2.4	1.47 x 1.67	1.00 x 1.51	3.15 x 2.18	1.73 x 2.43
Wafer Fabrication Site	TSMC Fab-11	TSMC Fab-11	TSMC Fab-11	TSMC Fab-11	TSMC Fab-11	TSMC Fab-11	TSMC Fab-11
Wafer Fabrication Process	0.18um CMOS	0.18um CMOS	0.18um CMOS	0.18um CMOS	0.18um CMOS	0.18um CMOS	0.18um CMOS
Die Substrate	Si	Si	Si	Si	Si	Si	Si
Metallization / # Layers	AlCu(0.5%)/5	AlCu(0.5%)/5	AlCu(0.5%)/5	AlCu(0.5%)/5	AlCu/5	AlCu/5	AlCu(0.5%)/5
Polyimide	No	No	No	No	No	No	No
Passivation	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN	undoped-oxide/SiN

Table 1.2: Die/Fab Product Characteristics- MEMS

Product Characteristics	Product(s) to be qualified	
Generic/Root Part #	ADXL380	ADXL382
Die Id	XSC09 / TMRF94 B	XSC08 / TMRF93 C
Die Size (mm)	1.78 x 1.98	1.78 x 1.98
Wafer Fabrication Site	E_TSMC0308	E_TSMC0308
Wafer Fabrication Process	MEMS	MEMS
Die Substrate	Si	Si
Metallization / # Layers	AlCu(0.5%)/2	AlCu(0.5%)/2
Polyimide	No	No
Passivation	No	No

Die/Fab Test Results

Table 2.1: Die/Fab Test Results - 0.18um CMOS at TSMC Fab-11

Test Name	Spec	Conditions	Generic Part #	Lot #	Fail/SS
Early Life Failure Rate (ELFR)	JESD22-A108	Ta=125°C, 48 Hours	ADUX1050	Q19068	0/2060
Early Life Failure Rate (ELFR) ¹	AEC-Q100-008	Ta=125°C, 24 Hours	ADXL351	Q14372	0/2400
		Ta=125°C, 48 Hours	ADP1762	Q14221	0/2400
High Temperature Operating Life (HTOL) ²	JESD22-A108	125°C<Tj<135°C, Biased, 1,000 Hours	ADXL380	Q21521.1.15	0/77
				Q21521.2.11	0/77
				Q21521.3.11	0/77
			ADXL318	Q23160.1.13	0/77
			ADXL382	Q21521.1.1	0/77
				Q21521.2.1	0/77
				Q21521.3.1	0/77
			ADXL319	Q23160.1.14	0/77
High Temperature Storage Life (HTSL)	JESD22-A103	150°C, 1,000 Hours	ADXL382	Q21521.1.6	0/77
				Q21521.2.6	0/77
				Q21521.3.6	0/77
Highly Accelerated Temperature and Humidity Stress Test (HAST) ²	JESD22-A110	110C 85%RH 17.7 psia, Biased, 264 hrs.	ADXL382	Q21521.1.4	0/77
				Q21521.2.4	0/77
				Q21521.3.4	0/77

¹ Pre- and post-stress electrical test was performed at room and hot temperatures.

² These samples were subjected to preconditioning at MSL 3 with 3x reflow peak temp of 260°C prior to the start of the stress test.

Table 2.2: Die/Fab Test Results - MEMS at TSMC Fab-3

Test Name	Spec	Conditions	Generic Part #	Lot #	Fail/SS
High Temperature Storage Life (HTSL)	JESD22-A103	150°C, 1,000 Hours	ADXL382	Q21521.1.6	0/77
				Q21521.2.6	0/77
				Q21521.3.6	0/77
Highly Accelerated Temperature and Humidity Stress Test (HAST) ¹	JESD22-A110	110C 85%RH 17.7 psia, Biased, 264 hrs.	ADXL382	Q21521.1.4	0/77
				Q21521.2.4	0/77
				Q21521.3.4	0/77
Mechanical Shock - Powered	IEC 60068-2-27	10kg, 5 shock pulses per axis orientation, 0.2ms	ADXL380	Q21521.1.28	0/32
				Q21521.2.17	0/32
				Q21521.3.16	0/32
			ADXL382	Q21521.1.26	0/32
				Q21521.2.15	0/32
				Q21521.3.14	0/32

Table 2.2: Die/Fab Test Results - MEMS at TSMC Fab-3 (Cont.)

Test Name	Spec	Conditions	Generic Part #	Lot #	Fail/SS
Mechanical Shock - Un-Powered	IEC 60068-2-27	10kg, 5 shock pulses per axis orientation, 0.2ms	ADXL380	Q21521.1.27	0/32
				Q21521.2.16	0/32
				Q21521.3.15	0/32
			ADXL382	Q21521.1.25	0/32
				Q21521.2.14	0/32
				Q21521.3.13	0/32
Guided Drop	IEC 60068-2-32	1X6 axes- 1.2m concrete	ADXL380	Q21521.1.33	0/25
				Q21521.2.22	0/25
				Q21521.3.22	0/25
			ADXL382	Q21521.1.8	0/25
				Q21521.2.8	0/25
				Q21521.3.8	0/25
Temperature Cycling (TC) ¹	JESD22-A104	-55°C/+125°C, 2,000 Cycles	ADXL380	Q21521.3.9	0/77
				Q21521.1.16	0/77
				Q21521.2.9	0/77
			ADXL382	Q21521.2.2	0/77
				Q21521.3.2	0/77
				Q21521.1.2	0/77
		-65°C/+150°C, 500 Cycles	ADXL380	Q21521.2.10	0/77
				Q21521.3.10	0/77
				Q21521.1.17	0/77
			ADXL382	Q21521.1.3	0/77
				Q21521.2.3	0/77
				Q21521.3.3	0/77
Group D	MIL-STD-883, M5005	Sub 4, Cent.	ADXL380	Q21521.1.32	0/39
				Q21521.2.21	0/39
				Q21521.3.21	0/39
			ADXL382	Q21521.1.31	0/39
				Q21521.2.23	0/39
				Q21521.3.23	0/39
		Sub 4, Shock/Vib	ADXL380	Q21521.1.30	0/39
				Q21521.2.19	0/39
				Q21521.3.19	0/39
			ADXL382	Q21521.1.29	0/39
				Q21521.2.18	0/39
				Q21521.3.18	0/39

¹ These samples were subjected to preconditioning at MSL 3 with 3x reflow peak temp of 260°C prior to the start of the stress test.

Package/Assembly Product Characteristics

Table 3: Package/Assembly Product Characteristics - 14-LGA at ASE (AEK)

Product Characteristics	Product(s) to be qualified	
Generic/Root Part #	ADXL380	ADXL382
Package	14-LGA	14-LGA
Body Size (mm)	2.90 x 2.80 x 0.87	2.90 x 2.80 x 0.87
Assembly Location	ASE (AEK)	ASE (AEK)
MSL/Peak Reflow Temperature(°C)	3 / 260°C	3 / 260°C
Mold Compound	Nitto GE 100LFCS	Nitto GE 100LFCS
Die Attach/Underfill	Lintec LE5000 film non-conductive / No	Lintec LE5000 film non-conductive / No
Leadframe Material	BT	BT
Lead Finish	Au	Au
Wire Bond Material/Diameter (mils)	PdCuAu 4N / 0.70	PdCuAu 4N / 0.70

Package/Assembly Test Results

Table 4: Package/Assembly Test Results - LGA at ASE (AEK)

Test Name	Spec	Conditions	Generic Part #	Lot #	Fail/SS
Group D	MIL-STD-883, M5005	Sub 4, Cent.	ADXL380	Q21521.1.32	0/39
				Q21521.2.21	0/39
				Q21521.3.21	0/39
			ADXL382	Q21521.1.31	0/39
				Q21521.2.23	0/39
				Q21521.3.23	0/39
		Sub 4, Shock/Vib	ADXL380	Q21521.1.30	0/39
				Q21521.2.19	0/39
				Q21521.3.19	0/39
			ADXL382	Q21521.1.29	0/39
				Q21521.2.18	0/39
				Q21521.3.18	0/39
Guided Drop	IEC 60068-2-32	1X6 axes- 1.2m concrete	ADXL380	Q21521.1.33	0/25
				Q21521.2.22	0/25
				Q21521.3.22	0/25
			ADXL382	Q21521.1.8	0/25
				Q21521.2.8	0/25
				Q21521.3.8	0/25
High Temperature Storage Life (HTSL)	JESD22-A103	150°C, 1,000 Hours	ADXL382	Q21521.1.6	0/77
				Q21521.2.6	0/77
				Q21521.3.6	0/77
Highly Accelerated Temperature and Humidity Stress Test (HAST) ¹	JESD22-A110	110C 85%RH 17.7 psia, Biased, 264 hrs.	ADXL382	Q21521.1.4	0/77
				Q21521.2.4	0/77
				Q21521.3.4	0/77
Solder Heat Resistance (SHR) ¹	J-STD-020	MSL-3	ADXL382	Q21521.1.7	0/11
				Q21521.2.7	0/11
				Q21521.3.7	0/11
			ADXL382	Q21521.1.24	0/11
				Q21521.2.12	0/11
				Q21521.3.12	0/11
Unbiased HAST (UHST) ¹	JESD22-A118	110C 85%RH 17.7 psia, 264hrs.	ADXL382	Q21521.1.5	0/77
				Q21521.2.5	0/77
				Q21521.3.5	0/77

Table 4: Package/Assembly Test Results - LGA at ASE (AEK) (Cont.)

Test Name	Spec	Conditions	Generic Part #	Lot #	Fail/SS
Temperature Cycling (TC) ¹	JESD22-A104	-55°C/+125°C, 2,000 Cycles	ADXL380	Q21521.3.9	0/77
				Q21521.1.16	0/77
				Q21521.2.9	0/77
			ADXL382	Q21521.2.2	0/77
				Q21521.3.2	0/77
				Q21521.1.2	0/77
		-65°C/+150°C, 500 Cycles	ADXL380	Q21521.2.10	0/77
				Q21521.3.10	0/77
				Q21521.1.17	0/77
			ADXL382	Q21521.1.3	0/77
				Q21521.2.3	0/77
				Q21521.3.3	0/77

¹ These samples were subjected to preconditioning at MSL 3 with 3x reflow peak temp of 260°C prior to the start of the stress test.

ESD and Latch-Up Test Results

Table 5: ESD Test Result

ESD Model	Package	ESD Test Spec	RC Network	Highest Pass Level	Class
FICDM	14-LGA	JS-002	1Ω, Cpkg	±1250V	C3
HBM	14-LGA	JS-001	1.5kΩ, 100pF	±3000V	2

Table 6: Latch Up Test Result

LU Test Spec	Passing Current	Passing Over-Voltage	Temperature (T _A)	Class
JESD78	+200mA, -200mA	+2.97V, 5.4V	125°C	II

Approvals

Reliability Engineer: Michael Walornyj, Mike Aldrich