



## Product/Process Change Notice - PCN 22\_0133 Rev. -

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

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. **Any inquiries or requests with this PCN (additional data or samples) must be sent to ADI within 30 days of publication date.** ADI contact information is listed below.

**PCN Title:** Carsem-M as an Alternate Assembly Site for LCC package for ADXL35X Family

**Publication Date:** 20-Jul-2022

**Effectivity Date:** 22-Oct-2022 *(the earliest date that a customer could expect to receive changed material)*

**Revision Description:**  
Initial Release.

**Description Of Change:**

ADI will be utilizing Carsem-M as an alternate source assembly site for LCC package.

**Reason For Change:**

Adding Carsem-M as an alternate source site to ensure continuous supply in order to meet volume requirements.

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

There is no expected change in device functionality, fit, form and reliability.

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

Parts assembled at Carsem Malaysia will be identified by Assembly Lot number and Date Code.

**Summary of Supporting Information:**

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

**Supporting Documents**

**Attachment 1: Type:** Qualification Results Summary

ADI\_PCN\_22\_0133\_Rev\_-\_ADXL351 Carsem Qualification Report for Commercial Application.pdf

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

**Americas:**  
PCN\_Americas@analog.com

**Europe:**  
PCN\_Europe@analog.com

**Japan:**  
PCN\_Japan@analog.com

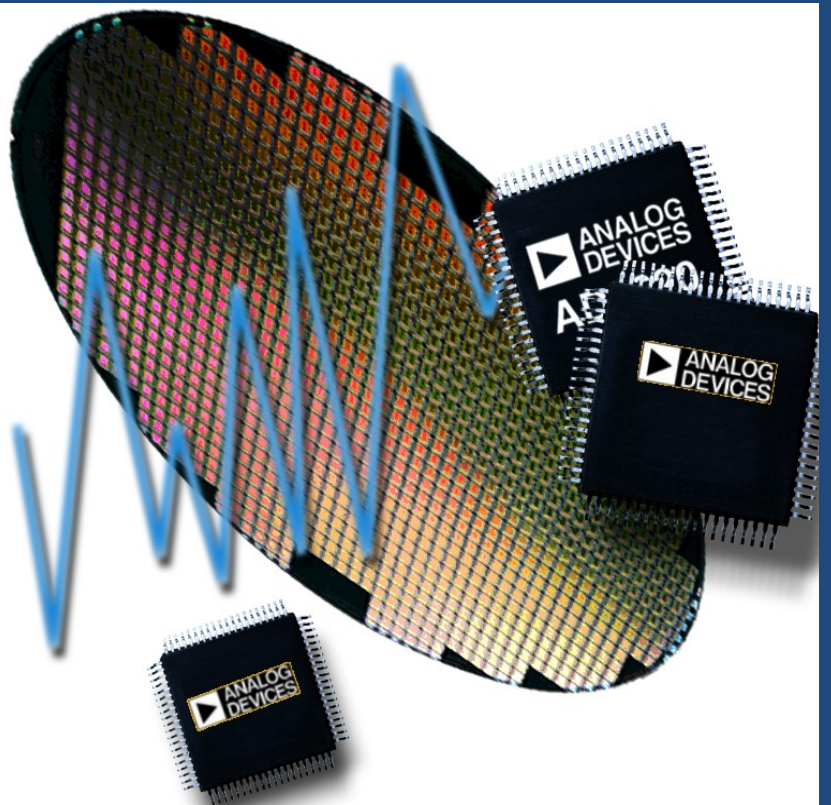
**Rest of Asia:**  
PCN\_ROA@analog.com

Appendix A - Affected ADI Models				
Added Parts On This Revision - Product Family / Model Number (32)				
ADXL354 / ADXL354BEBXH2Z	ADXL354 / ADXL354BEZ	ADXL354 / ADXL354BEZ-RL	ADXL354 / ADXL354BEZ-RL7	ADXL354 / ADXL354CEBXH2Z
ADXL354 / ADXL354CEZ	ADXL354 / ADXL354CEZ-RL	ADXL354 / ADXL354CEZ-RL7	ADXL354 / ADXL354HXEZ	ADXL354 / ADXL354HXEZ-RL7
ADXL354 / ADXL354XEZ	ADXL354 / ADXL354XEZ-RL7	ADXL355 / AD22323Z	ADXL355 / ADXL355BEBXH2Z	ADXL355 / ADXL355BEZ
ADXL355 / ADXL355BEZ-RL	ADXL355 / ADXL355BEZ-RL7	ADXL356 / ADXL356BEBXH2Z	ADXL356 / ADXL356BEZ	ADXL356 / ADXL356BEZ-RL
ADXL356 / ADXL356BEZ-RL7	ADXL356 / ADXL356CEBXH2Z	ADXL356 / ADXL356CEZ	ADXL356 / ADXL356CEZ-RL	ADXL356 / ADXL356CEZ-RL7
ADXL356 / ADXL356TEZ-EP	ADXL356 / ADXL356TEZ-EP-RL	ADXL356 / ADXL356TEZ-EP-RL7	ADXL357 / ADXL357BEBXH2Z	ADXL357 / ADXL357BEZ
ADXL357 / ADXL357BEZ-RL	ADXL357 / ADXL357BEZ-RL7			

Appendix B - Revision History			
Rev	Publish Date	Effectivity Date	Rev Description
Rev. -	20-Jul-2022	22-Oct-2022	Initial Release.

Analog Devices, Inc.

DocId:8917   Parent DocId:None   Layout Rev:8



# ***Reliability Report***

<b>Report Title:</b>	<b>ADXL351 Carsem Package Transfer Qualification (Interim Report)</b>
<b>Report Number:</b>	<b>18985</b>
<b>Revision:</b>	<b>A</b>
<b>Date:</b>	<b>06 July 2022</b>

## Summary

This report documents the successful completion of the reliability qualification requirements for commercial release of the ADXL351 product in a 14-LCC package. The ADXL351 is a low noise, low drift, low power 3-axis accelerometer in 14-LCC package at Carsem. The ADXL351 is targeted for use in ADIS16550W, an automotive-qualified, high performance iSensor IMU module. It is targeted at Level 3+ Autonomous Vehicles and is a critical input for determining precise positioning for navigation and emergency redundancy of the self-driving system.

**Table 1: ADXL351 Product Characteristics**

### Die/Fab

Die Id	TMLB22 A / XA351 A	XM357 A
Die Size (mm)	1.73 x 2.43	2.85 x 2.56
Wafer Fabrication Site	E_TSMC1108	I_WILM1B08
Wafer Fabrication Process	0.18um CMOS	MEMS
Approximate Transistor Count	NA	NA
Passivation Layer	undoped-oxide/SiN	None
Bond Pad Metal Composition	AlCu(0.5%)	AlCu(0.5%)

### Package/Assembly

Package	14-LCC
Body Size (mm)	6.00 x 6.00 x 2.20
Assembly Location	CARSEM (CRM)
Adhesive Material	Die 1 (D1): Henkel JM7000 conductive Die 2 (D2): Henkel ABP8151D7 non-conductive
Wire Type	HTS 2N Gold
Wire Diameter (mils)	1.0
Lid Shield Material	Alloy 42
Lid Shield Attach Material	90Pb_5.0Sn_3.0Ag2.0In
Mark Process	Laser
Terminal Finish Composition	Au
Glass Type	NA
Moisture Sensitivity Level	3
Maximum Peak Reflow Temperature (°C)	260

## Description / Results of Tests Performed

Tables 2 provides a description of the qualification tests conducted and the associated test results for products manufactured on the same technologies as described in Table 1. All devices were electrically tested before and after each stress. Any device that did not meet all electrical data sheet limits following stressing would be considered a valid (stress-attributable) failure unless there was conclusive evidence to indicate otherwise.

**Table 2: ADXL351 Qualification Test Results**

Test Name	Specification	Conditions	Device	Lot #	Sample Size	Qty. Failures
Group D	MIL-STD-883, M5005	Sub 4, Shock/Vib/Cent.	ADXL351	Q18985.1.1	15	0
				Q18985.2.1	15	0
				Q18985.3.1	15	0
Guided Drop	IEC 60068-2-32	1X6 axes- 1.2m concrete, Single Duration	ADXL351	Q18985.1.2	25	0
				Q18985.2.2	25	0
				Q18985.3.2	25	0
High Temperature Storage Life (HTSL)	JESD22-A103	200C, 72hr	ADXL351	Q18985.1.3	77	0
Mechanical Shock - Un-Powered	IEC 60068-2-27	10,000g, 5 Shock Pulses, 0.1ms, Single Duration	ADXL351	Q18985.1.7	32	0
				Q18985.2.6	32	0
				Q18985.3.6	32	0
Mechanical Shock - Powered	IEC 60068-2-27	10,000g, 5 Shock Pulses, 0.1ms, Single Duration	ADXL351	Q18985.1.7	32	0
				Q18985.2.6	32	0
				Q18985.3.6	32	0
Temperature Cycling (TC) <sup>1</sup>	JESD22-A104	-55°C/+125°C, 1,000 Cycles	ADXL351	Q18985.1.4	77	0
				Q18985.2.3	77	0
				Q18985.3.3	77	0

<sup>1</sup> These samples were subjected to preconditioning (per J-STD-020 Level 3) prior to the start of the stress test. Level 3 preconditioning consists of the following: 1. Bake – 24 hours at 125°C; 2. Soak – unbiased soak for 192 hours at 30°C, 60%RH; 3. Reflow – three passes through a reflow oven with a peak temperature of 260°C. TC samples were subjected to wire-pull test after 500 cycles with results within specification limits.

Samples of the many devices manufactured with these package and process technologies are continuously undergoing reliability evaluation as part of the ADI Reliability Monitor Program. Additional qualification data is available on [Analog Devices' web site](#).

## **Approvals**

Reliability Engineer: Michael Walornyj

## **Additional Information**

Data sheets and other additional information are available on [Analog Devices' web site](#)