Product/Process Change Notice - PCN 22_0277 Rev. -

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. **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:	Qualification of an Alternate Adhesive Material and Molding Compound for Select LFCSP Packages
Publication Date:	10-Nov-2022
Effectivity Date:	12-Feb-2023 *(the earliest date that a customer could expect to receive changed material)*
Revision Description:	Initial Release.

Description Of Change:

Qualification of an alternate adhesive material and molding compound for select LFCSP packages (multi-die, 6x6~7x7 LFCSP).
1. Adhesive material: Hitachi EN4900 GC.
2. Mold compound: Sumitomo G700LA.

Reason For Change:

Additional adhesive material and molding compound for increased capability.

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

The devices' fit, form, function and reliability as specified by the Product Data Sheet will be unaffected by these changes. The package outline dimension and lead footprint dimension will remain the same for LFCSP packages.

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

Date Code and Lot number will be used for product identification.

Summary of Supporting Information:

Qualification will be performed for multi die & 7x7 LFCSP per Industry Standard Test Methods. See attached Qualification Plans.
Qualification has been performed for 6x6 LFCSP per Industry Standard Test Methods. See attached Qualification Report.

Supporting Documents

Attachment 1: Type: Qualification Plan

ADI_PCN_22_0277_Rev_-_Qualification Plan (multi-die).pdf...

Attachment 2: Type: Qualification Plan

ADI_PCN_22_0277_Rev_-_Qualification Plan (7x7).pdf...

Attachment 3: Type: Qualification Results Summary

ADI_PCN_22_0277_Rev_-_Qualification Report (6x6).pdf...

Attachment 4: Type: Detailed Change Description

ADI_PCN_22_0277_Rev_-_Detailed Change Description .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:	Rest of Asia:
PCN_Americas@analog.com	PCN_Europe@analog.com	PCN_Japan@analog.com	PCN_ROA@analog.com

Appendix A - Affected ADI Models:				
Added Parts On This Revision - Product Family / Model Number (72)				
AD5348 / AD5348BCPZ	AD7674 / AD7674ACPZ	AD8124 / AD8124ACPZ	AD8124 / AD8124ACPZ-R7	AD8124 / AD8124ACPZ-RL
AD8264 / AD8264ACPZ	AD8264 / AD8264ACPZ-R7	AD8264 / AD8264ACPZ-RL	AD9117 / AD9117BCPZN	AD9117 / AD9117BCPZNRL7
ADAU1372 / AD71169BCPZ	ADAU1372 / AD71169BCPZRL	ADAU1372 / ADAU1372BCPZ	ADAU1372 / ADAU1372BCPZRL	ADDI7018 / ADDI7018BCPZ
ADDI7018 / ADDI7018BCPZRL	ADE9078 / ADE9078ACPZ	ADE9078 / ADE9078ACPZ-RL	ADF4150HV / ADF4150HVBCPZ	ADF4150HV / ADF4150HVBCPZ-RL7
ADF4152HV / ADF4152HVBCPZ	ADF4152HV / ADF4152HVBCPZ-RL7	ADF7020 / AD45203Z-RL	ADF7020 / ADF7020BCPZ	ADF7020 / ADF7020BCPZ-RL
ADF7021 / AD45208Z-RL	ADF7021 / ADF7021BCPZ	ADF7021 / ADF7021BCPZ-RL	ADF7021 / ADF7021BCPZ-RL7	ADF9010 / ADF9010BCPZ
ADF9010 / ADF9010BCPZ-RL7	ADG725 / ADG725BCPZ	ADIN1300 / ADIN1300BCPZ	ADIN1300 / ADIN1300BCPZ-R7	ADIN1300 / ADIN1300CCPZ
ADIN1300 / ADIN1300CCPZ-R7	ADM1062 / ADM1062ACPZ	ADM1062 / ADM1062ACPZ-REEL7	ADM1063 / ADM1063ACPZ	ADM1063 / ADM1063ACPZ-REEL7
ADM1065 / ADM1065ACPZ	ADM1066 / ADM1066ACPZ	ADM1066 / ADM1066ACPZ-REEL7	ADM1069 / ADM1069ACPZ	ADM1069 / ADM1069ACPZ-REEL
ADM1069 / ADM1069ACPZ-REEL7	ADP2443 / ADP2443ACPZN-R7	ADUC7019 / ADUC7019BCPZ62I	ADUC7019 / ADUC70TEL	ADUC7019 / ADUC70TEL-RL7
ADUC7020 / ADUC7020BCPZ62	ADUC7020 / ADUC7020BCPZ62-RL7	ADUC7020 / ADUC7020BCPZ62I	ADUC7020 / ADUC7020BCPZ62I-RL	ADUC7020 / ADUC7020BCPZ62IRL7
ADUC7022 / ADUC7022BCPZ32	ADUC7022 / ADUC7022BCPZ32-RL	ADUC7022 / ADUC7022BCPZ62	ADUC7022 / ADUC7022BCPZ62-RL7	ADUC7023 / AD70/001Z-0RL
ADUC7023 / AD70/003Z-0R7	ADUC7023 / ADUC7023BCPZ62I	ADUC7023 / ADUC7023BCPZ62I-R7	ADUC7023 / ADUC7023BCPZ62I-RL	ADUCM362 / ADUCM362BCPZ128
ADUCM362 / ADUCM362BCPZ128RL7	ADUCM362 / ADUCM362BCPZ256	ADUCM362 / ADUCM362BCPZ256RL7	ADUCM363 / ADUCM363BCPZ128	ADUCM363 / ADUCM363BCPZ128RL7
ADUCM363 / ADUCM363BCPZ256	ADUCM363 / ADUCM363BCPZ256RL7			

Appendix B - Revision History:			
Rev	**Publish Date**	**Effectivity Date**	**Rev Description**
Rev. -	10-Nov-2022	12-Feb-2023	Initial Release.

ANALOG DEVICES
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Qualification of New Adhesive Material and Molding Compound for Select LFCSP Packages

Detailed Change Description

Qualification of New Adhesive Material and Molding Compound for Select LFCSP Packages

- For NiPdAu-Plating lead frame

BOM	Current	Newly added
Adhesive	Hitachi 4900GC	/
Molding Compound	Hitachi CEL 9220HF13	Sumitomo G700LA

Qualification of New Adhesive Material and Molding Compound for Select LFCSP Packages

- For Ag-plating lead frame

BOM	Current	Newly added
Adhesive	Ablestik 8290 Ablestik 3230	Hitachi 4900GC
Molding Compound	Sumitomo G770	Sumitomo G700LA

Qualification of an Alternate Adhesive Material and Molding Compound for Select LFCSP Packages

Qualification Plan Summary for 7x7 LFCSP

QUALIFICATION PLAN			
TEST	**SPECIFICATION**	**SAMPLE SIZE**	**EXPECTED COMPLETION DATE**
Temperature Cycle (TC)*	JEDEC *JESD22-A104*	3 x 77	Jan 2023
Solder Heat Resistance (SHR)*	JEDEC/IPC *J-STD-020*	3 x 11	Jan 2023
High Temperature Storage (HTS)	JEDEC *JESD22-A103*	1 x 77	Jan 2023
Unbiased Highly Accelerated Stress Test (UHAST)*	JEDEC *JESD22-A118*	3 x 77	Jan 2023
Field Induced Charged Device Model Electrostatic Discharge (FICDM-ESD)	JEDEC *JS-002-2018*	3/Voltage	Jan 2023

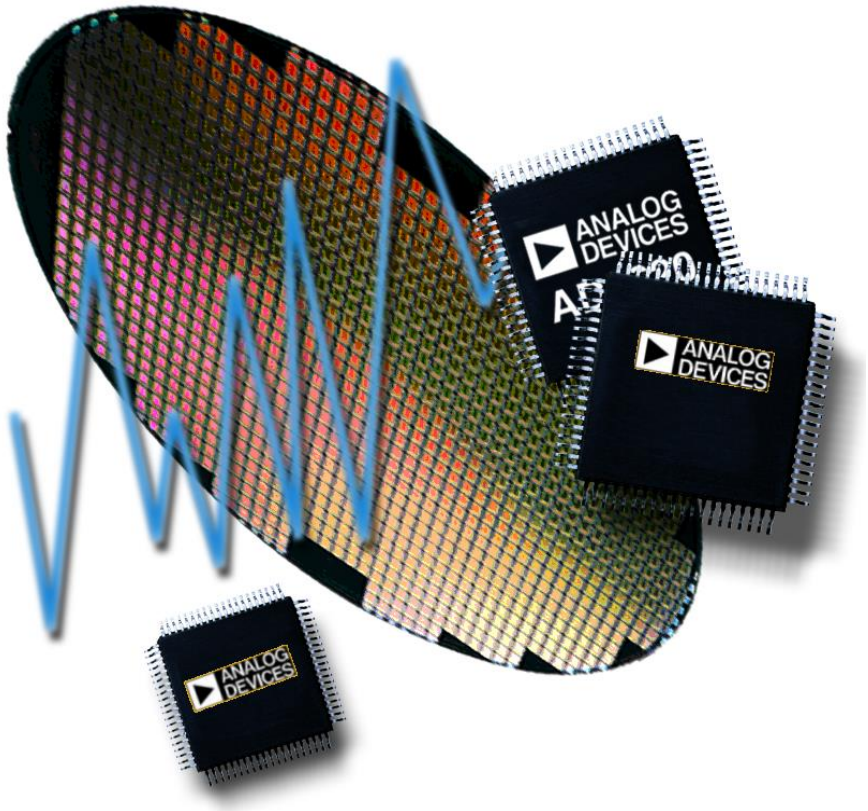
* Preconditioned per JEDEC/IPC J-STD-020.

Qualification of an Alternate Adhesive Material and Molding Compound for Select LFCSP Packages

Qualification Plan Summary for Multi Die LFCSP

QUALIFICATION PLAN			
TEST	**SPECIFICATION**	**SAMPLE SIZE**	**EXPECTED COMPLETION DATE**
Temperature Cycle (TC)*	JEDEC *JESD22-A104*	3 x 77	Jan 2023
Solder Heat Resistance (SHR)*	JEDEC/IPC *J-STD-020*	3 x 11	Jan 2023
High Temperature Storage (HTS)	JEDEC *JESD22-A103*	1 x 77	Jan 2023
Unbiased Highly Accelerated Stress Test (UHAST)*	JEDEC *JESD22-A118*	3 x 77	Jan 2023
Field Induced Charged Device Model Electrostatic Discharge (FICDM-ESD)	JEDEC *JS-002-2018*	3/Voltage	Jan 2023

* Preconditioned per JEDEC/IPC J-STD-020.



Reliability Report

Report Title: 6x6 LFCSP at JC2 Qualification

Report Number: 19662

Revision: A

Date: 9 August 2022

Summary

This report documents the successful completion of the reliability qualification requirements for the release of the 6x6 LFCSP package assembled at JC2. The ADAU1372 is the device vehicle used for this qualification. The ADAU1372 is a codec with four inputs and two outputs, which incorporates asynchronous sample rate converters. Optimized for low latency and low power, the ADAU1372 is ideal for headsets, handsets, and headphones. Table 1 describes the ADAU1372 product characteristics.

Table 1: ADAU1372 Product Characteristics

Die/Fab

Die Id	TMDR26 B
Die Size (mm)	3.81 x 3.23
Wafer Fabrication Site	E_TSMC8B08
Wafer Fabrication Process	0.18um CMOS
Passivation Layer	undoped-oxide/SiN
Bond Pad Metal Composition	AlCu(0.5%)

Package/Assembly

Package	40-LFCSP
Body Size (mm)	6.00 x 6.00 x 0.75
Assembly Location	JCET (JC2)
Molding Compound	Sumitomo G700LA
Die Attach	Hitachi EN 4900GC conductive
Wire Type	4N Gold
Wire Diameter (mils)	1.0
Lead Frame Material	Copper
Lead Finish	100 Sn
Moisture Sensitivity Level	3
Maximum Peak Reflow Temperature (°C)	260

Description / Results of Tests Performed

Table 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: LFCSP at JCET (JC2) Package Qualification Test Results

Test Name	Specification	Conditions	Device	Lot #	Sample Size	Qty. Failures
High Temperature Storage Life (HTSL)	JESD22-A103	150°C, 1,000 Hours	ADAU1372	Q19662.1.HS1	77	0
Solder Heat Resistance (SHR) [1]	J-STD-020	MSL-3	ADAU1372	Q19662.1.SH1	11	0
				Q19662.2.SH2	11	0
				Q19662.3.SH3	11	0
Temperature Cycling (TC) [1]	JESD22-A104	-65°C/+150°C, 500 Cycles	ADAU1372	Q19662.1.TC1	77	0
				Q19662.2.TC2	77	0
				Q19662.3.TC3	77	0
Unbiased HAST (UHST) [1]	JESD22-A118	130C 85%RH 33.3 psia, 96 Hours	ADAU1372	Q19662.1.UH1	77	0
				Q19662.2.UH2	77	0
				Q19662.3.UH3	77	0

[1] 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: Bake: 24 hrs @ 125°C, Unbiased Soak: 192 hrs @ 30°C, 60%RH, Reflow: 3 passes through an oven with a peak temperature of 260°C.

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.

ESD Test Results

The results of Field-Induced Charged Device Model (FICDM) ESD testing is summarized in Table 3. ADI measures ESD results using stringent test procedures based on the specifications listed. Any comparison with another supplier's results should ensure that the same ESD test procedures have been used. For further details, please see the EOS/ESD chapter of the ADI Reliability Handbook (available via the 'Quality and Reliability' link on Analog Devices' web site).

Table 3: ADAU1372 ESD Test Results

ESD Model	Package	ESD Test Spec	RC Network	Highest Pass Level	First Fail Level	Class
FICDM	40-LFCSP	JS-002	1Ω, Cpkg	±1250V	NA	C3

Approvals

Reliability Engineer: Pernell Marc Mosuela

Additional Information

Data sheets and other additional information are available on Analog Devices' web site