Product/Process Change Notice - PCN 22_0178 Rev. B

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.

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

PCN Title:	UTAC Thailand as an Alternate Assembly Site and UTAC Singapore as an Alternate Test Site for Select (LFCSP) Products
Publication Date:	04-Apr-2023
Effectivity Date:	07-Jul-2023 *(the earliest date that a customer could expect to receive changed material)*
Revision Description:	Revised Qualification Report for Mold Compound Change.

Description Of Change:

Analog Devices will be utilizing UTAC Thailand as an alternate assembly site and UTAC Singapore as an alternate test site for select products in LFCSP packages.

See attached Material_Change_Description in the supporting documents section of this PCN for details regarding change to mold compound and die attach material.

Reference the attached qualification report for the material set used by UTAC Thailand for the LFCSP package.

Reason For Change:

Adding capacity to ensure continuity of supply in order to meet customer demand.

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

There are no changes to fit, form, functionality or reliability.

Summary of Supporting Information:

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

Test correlation and validation has been performed per ADI's standard product site to site and/or platform change correlation procedure. See attached Qualification Report.

Supporting Documents

Attachment 1: Type: Qualification Results Summary

ADI_PCN_22_0178_Rev_B_ADI_PCN_22_0178_Rev_B_Qualification_Report.pdf...

Attachment 2: Type: Test Correlation Report

ADI_PCN_22_0178_Rev_B_Test_Correlation_Report_AD2426W_AD2427W_AD2428W....

Attachment 3: Type: Detailed Change Description

ADI_PCN_22_0178_Rev_B_Material_Change_Description.pdf...

Attachment 4: Type: Delta Qualification Matrix

ADI_PCN_22_0178_Rev_B_PCN-Delta-Qualification-Matrix-ZVEI-5_0_14_2.xls...

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:

Existing Parts - Product Family / Model Number (25)				
AD2426W / AD2426WCCSZ	AD2426W / AD2426WCCSZ-RL	AD2426W / AD2426WCCSZ01	AD2426W / AD2426WCCSZ01-RL	AD2427W / AD2427WCCSZ
AD2427W / AD2427WCCSZ-RL	AD2427W / AD2427WCCSZ01	AD2427W / AD2427WCCSZ01-RL	AD2428W / AD2428WCCSZ	AD2428W / AD2428WCCSZ-RL
AD2428W / AD2428WCCSZ01	AD2428W / AD2428WCCSZ01-RL	AD2428W / AD2428WCCSZ02	AD2428W / AD2428WCCSZ02-RL	AD2428W / ADW95179Z-10
AD2428W / ADW95179Z-10RL	AD2428W / ADW95185Z-01	AD2428W / ADW95185Z-01RL	AD2428W / ADW95186Z-01	AD2428W / ADW95186Z-01RL
AD2428W / ADW95187Z-01	AD2428W / ADW95187Z-01RL	AD2428W / ADW95190Z	AD2428W / ADW95190Z-RL	AD2428W / ADW99038Z-RL

Appendix B - Revision History:

Rev	Publish Date	Effectivity Date	Rev Description
Rev. -	05-Dec-2022	09-Mar-2023	Initial Release.
Rev. A	24-Jan-2023	28-Apr-2023	Add Material Change Description. Add Revised Delta Qualification.
Rev. B	04-Apr-2023	07-Jul-2023	Revised Qualification Report for Mold Compound Change.

Material Change Description

ANALOG DEVICES
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UTAC Thailand as an Alternate Assembly Site and UTAC Singapore as an Alternate Test Site for Select (LFCSP) Products

Materials/Specifications	UTAC Assembly Site	STATSChipPAC Assembly Site
Mold Compound	Sumitomo G700LTD	Sumitomo G770
Adhesive Material	Ablestik 8600 conductive	Ablestik 3230 conductive
Bond Wire Type	GMG 4N Au	MKE 3N Au
Leadframe Material	Cu	Cu
Bond Wire Diameter	1.0 mil	1.0 mil
Finish Composition	100% Sn	100% Sn
Marking Process	Laser	Laser

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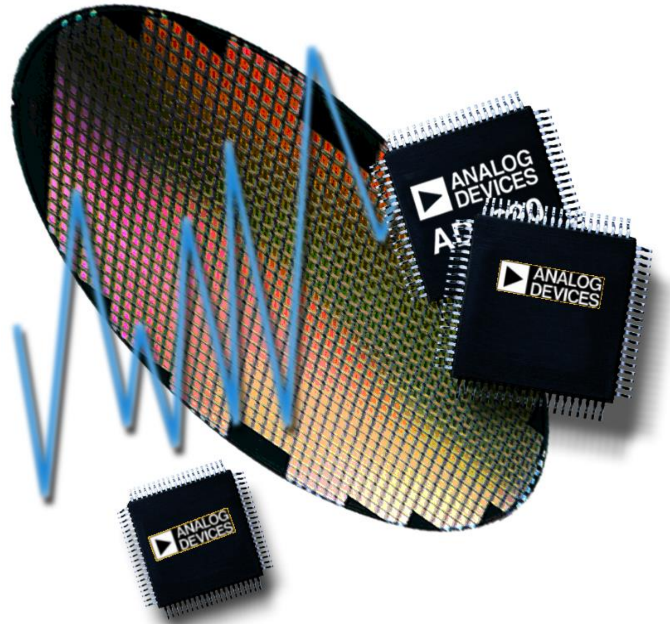

Reliability Report

Report Title:	**AD2428W UTAC Assembly Automotive Grade 2 Qualification**
Report Number:	**19769**
Revision:	**D**
Date:	**8 February 2023**

Summary

This report documents the successful completion of the reliability qualification requirements for the release of the products AD2426W, AD2427W, AD2428W in a 32-LFCSP_SS package assembled at UTAC. This product is an audio bus which provides a multi-channel link over distances.

Revision B adjusts the ETest Temperatures

Die/Fab Product Characteristics

Table 1: Die/Fab Product Characteristics- 0.18um DMOS

Product Characteristics	Product(s) to be qualified
Generic/Root Part #	AD2428W
Die Id	TMJR79A
Die Size (mm)	3.09 x 3.09
Wafer Fabrication Site	TSMC Fab-8B
Wafer Fabrication Process	0.18um DMOS
Die Substrate	Si
Metallization / # Layers	AlCu(0.5%)/6
Polyimide	yes
Passivation	undoped-oxide/SiN

Die/Fab Test Results

Table 2: Die/Fab Test Results - 0.18um BCD at TSMC Fab-8B

Test Name	AEC #	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS	eTest Temp
High Temperature Storage Life (HTSL)	A6	JESD22-A103	150°C, 1,000 Hours	AD2428W	Q19769.1.5	0/45	RH[2]
Highly Accelerated Temperature and Humidity Stress Test (HAST)[1]	A2	JESD22-A110	130C 85%RH 33.3 psia, Biased, 96 Hours	AD2428W	Q19769.1.1	0/77	RH[2]
					Q19769.2.1	0/77	RH[2]
					Q19769.3.1	0/77	RH[2]

[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.

[2] Pre- and post-stress electrical test was performed at room and hot temperatures.

Package/Assembly Product Characteristics

Table 3: Package/Assembly Product Characteristics - 32-LFCSP_SS at UTAC

Product Characteristics	Product(s) to be qualified
Generic/Root Part #	AD2428W
Package	32-LFCSP_SS
Body Size (mm)	5.00 x 5.00 x 0.75
Assembly Location	UTAC
MSL/Peak Reflow Temperature(°C)	3 / 260°C
Mold Compound	Sumitomo G700LTD
Die Attach	Ablestik 8600 conductive
Leadframe Material	Copper
Lead Finish	Matte Sn
Wire Bond Material/Diameter (mils)	GMG 4N Gold / 1.00

Package/Assembly Test Results

Table 4: Package/Assembly Test Results - LFCSP_SS at UTAC

Test Name	AEC #	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS	eTest Temp
High Temperature Storage Life (HTSL)	A6	JESD22-A103	150°C, 1,000 Hours	AD2428W	Q19769.1.5	0/45	RH[2]
Highly Accelerated Temperature and Humidity Stress Test (HAST)[1]	A2	JESD22-A110	130C 85%RH 33.3 psia, Biased, 96 Hours	AD2428W	Q19769.1.1	0/77	RH[2]
					Q19769.2.1	0/77	RH[2]
					Q19769.3.1	0/77	RH[2]
Solder Heat Resistance (SHR)[1]	A1	J-STD-020	MSL-3	AD2428W	Q19769.1.4	0/11	R[3]
					Q19769.2.4	0/11	R[3]
					Q19769.3.4	0/11	R[3]
Temperature Cycling (TC)[1]	A4	JESD22-A104	-65°C/+150°C, 1,000 Cycles	AD2428W	Q19769.1.2	0/77	RH[2]
					Q19769.2.2	0/77	RH[2]
					Q19769.3.2	0/77	RH[2]
Unbiased HAST (UHST)[1]	A3	JESD22-A118	130C 85%RH 33.3 psia, 96 Hours	AD2428W	Q19769.1.3	0/77	R[3]
					Q19769.2.3	0/77	R[3]
					Q19769.3.3	0/77	R[3]

[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.
[2] Pre- and post-stress electrical test was performed at room and hot temperatures.
[3] Pre- and post-stress electrical test was performed at room temperature.

Approvals

Reliability Engineer: Bobby Brown