Product/Process Change Notice - PCN 24_0091 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:	Design Update to ADL5350
Publication Date:	05-Jun-2024
Effectivity Date:	07-Sep-2024 *(the earliest date that a customer could expect to receive changed material)*
Revision Description:	Initial Release.

Description Of Change:

ADL5350 design was updated per the latest foundry rule for process and yield optimization.

Reason For Change:

Optimization of product performance.

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

Form, Fit and Function and reliability remains the same.

Summary of Supporting Information:

Q20635 already includes additional qual required for such changes.

Supporting Documents

Attachment 1: Type: Qualification Results Summary

ADI_PCN_24_0091_Rev_-_Qualification Results.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.

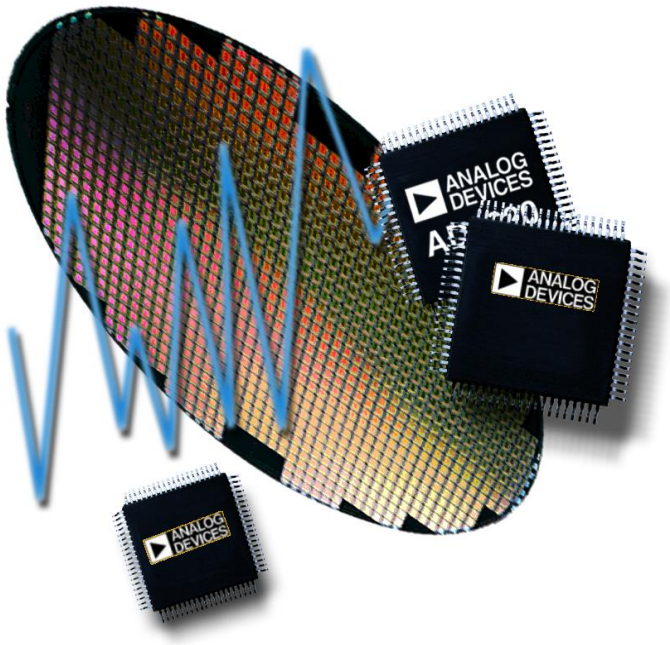
Americas:	Europe:	Japan:	Korea:	Rest of Asia:
PCN_Americas@analog.com	PCN_Europe@analog.com	PCN_Japan@analog.com	PCN_Korea@analog.com	PCN_ROA@analog.com

Appendix A - Affected ADI Models:

Added Parts On This Revision - Product Family / Model Number (3)

ADL5350 / ADL5350ACPZ-R2	ADL5350 / ADL5350ACPZ-R7	ADL5350 / ADL5350ACPZ-WP

Appendix B - Revision History:			
Rev	**Publish Date**	**Effectivity Date**	**Rev Description**
Rev. -	05-Jun-2024	07-Sep-2024	Initial Release.



Reliability Report

Report Title: ADL5350 Product Revision Qualification

Report Number: 20635

Revision: A

Date: 8 February 2024

Summary

This report documents the successful completion of the reliability qualification requirements for the release of the ADL5350 product in an 8-LFCSP package. The ADL5350 is LF to 4 GHz, High Linearity Y-Mixer.

Die/Fab Product Characteristics

Table 1: Die/Fab Product Characteristics- GaAs

Product Characteristics	Product(s) to be qualified
Generic/Root Part #	ADL5350
Die Id	ADL5350 A
Die Size (mm)	0.51 x 1.00
Wafer Fabrication Process	GaAs
Die Substrate	GaAs
Metallization	Au
Polyimide	No
Passivation	SiN

Die/Fab Test Results

Table 2: GaAs Fab Test Results

Test Name	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS
High Temperature Operating Life (HTOL)[1]	JESD22-A108	Tj=150°C, Biased, 1,000 Hours	ADL5350	Q20635.1.HO1	0/77
Early Life Failure (ELF)	JESD22-A108	Tj=125°C, Biased, 48 Hours	ADMV1550	Q17647.1.EL1	2100
			AD45110	Q7058	3700
High Temperature Storage Life (HTSL)	JESD22-A103	150°C, 1,000 Hours	ADL5350	Q5914.15	0/77
				Q5914.10	0/77
				Q5914.4	0/77
				Q5423.3	0/77
			AD45110	Q7058.20	0/77
				Q7058.20	0/77
				Q7058.16	0/77
				Q7058.16	0/77
				Q7058.12	0/77
				Q7058.12	0/77

[1] These samples were subjected to preconditioning (per J-STD-020 Level 1) prior to the start of the stress test. Level 1 preconditioning consists of the following: Bake: 24 hrs @ 125°C, Unbiased Soak: 168 hrs @ 85°C, 85%RH, Reflow: 3 passes through an oven with a peak temperature of 260°C.

Package/Assembly Product Characteristics

Table 3: Package/Assembly Product Characteristics - 8-LFCSP at AMKOR

Product Characteristics	Product to be Qualified
Generic/Root Part #	ADL5350
Package	8-LFCSP
Body Size (mm)	3.00 x 2.00 x 0.75
MSL/Peak Reflow Temperature(°C)	1 / 260°C
Mold Compound	Epoxy
Die Attach	Conductive Epoxy
Leadframe Material	Copper
Lead Finish	Matte Sn
Wire Bond Material/Diameter (mils)	2N Gold / 1.00

Package/Assembly Test Results

Table 4: Package/Assembly Test Results - LFCSP at AMKOR

Test Name	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS
Solder Heat Resistance (SHR)	J-STD-020	MSL-1	ADL5350	Q20635.1.SH1	0/30
High Temperature Storage Life (HTSL)	JESD22-A103	150°C, 1,000 Hours	ADL5350	Q5914.15	0/77
				Q5914.10	0/77
				Q5914.4	0/77
				Q5423.3	0/77
Temperature Cycling (TC)[1]	JESD22-A104	-65°C/+150°C, 500 Cycles	ADG1422	Q21492.28	0/77
				Q21492.28	0/77
				Q21492.28	0/77
			LT3046	Q19043.CT1	0/77
				Q19043.BT1	0/77
				Q19043.AT1	0/77
			AD8617	Q20259.27	0/77
				Q20259.27	0/77

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

ESD Test Results

Table 5: ESD Test Result

ESD Model	Generic/Root Part #	Package	ESD Test Spec	RC Network	Highest Pass Level	Class
FICDM	ADL5350	8-LFCSP	JS-002	1Ω, Cpkg	±1000V	C3
HBM	ADL5350	8-LFCSP	ESDA/JEDEC JS-001-2011	1.5kΩ, 100pF	±500V	1B

Approvals

Reliability Engineer: Thomas Wood