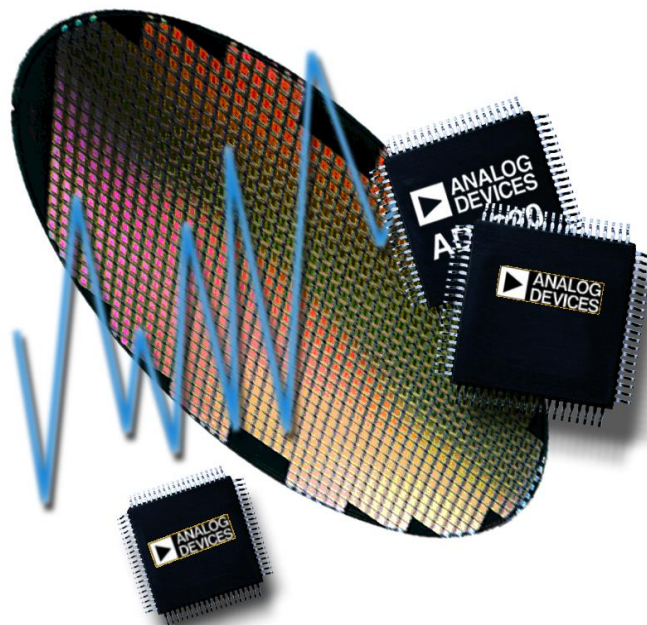




Reliability Report

Report Title:	LTM2987 Material Set Change Qualification
Report Number:	19828
Revision:	A
Date:	22 October 2023

Summary

This report documents the successful completion of the reliability qualification requirements for the release of the LTM2987 product in a 144-CSP_BGA package, with using new substrate supplier, Daisho PMS0118PG04E04.

Die/Fab Product Characteristics

Table 1: LTM2987 Die/Fab Product Characteristics

Product Characteristics	Product(s) to be qualified	
Generic/Root Part #	LTM2987	LTM2987
Die Id	2977	A G30
Die Size (mm)	3.44 x 3.18	2.87 x 1.70
Wafer Fabrication Site	Vanguard	TSMC Fab-3
Wafer Fabrication Process	0.6μm CMOS	0.25μm CMOS
Die Substrate	Si	Si
Bond Pad Metallization	AlCu	AlCu
Polyimide	No	No
Passivation	doped-oxide/SiN	undoped-oxide/SiN

Package/Assembly Product Characteristics

Table 2: Package/Assembly Product Characteristics - 144-CSP_BGA at ADI Penang

Product Characteristics	Product(s) to be qualified
Generic/Root Part #	LTM2987
Package	144-CSP_BGA
Body Size (mm)	15.00 x 15.00 x 3.42
Assembly Location	ADPG
MSL/Peak Reflow Temperature(°C)	3 / 245
Mold Compound	Hitachi GE100LFCWA
Substrate Material	BT Resin / HL-832NX-A
Terminal Finish	96.5Sn_3.0Ag_0.5Cu
Wire Bond Material/Diameter (mils)	Gold Tanaka GLD / 1.00

QMCL

QMCL PID P/N	Description	Vendor, Vendor P/N
PMS0118PG04E04	SUBSTRATE	Daisho Denshi, PMS0118PG04E04-01

Package/Assembly Test Results

Table 3: Package/Assembly Test Results - CSP_BGA at ADI Penang

Test Name	Spec	Conditions	Generic/Root Part #	Lot #	Fail/SS
Solder Heat Resistance (SHR)	J-STD-020	MSL-3	LTM2987	Q19828.1SHR	0/328
Temperature Cycling (TC) ¹	JESD22-A104	-55/125, Soak3, 10-14C/min, 1,000 Cycles	LTM2987	Q19828.1TC	0/77
Unbiased HAST (UHST) ¹	JESD22-A118	110C 85%RH 17.7 psia, 264hrs	LTM2987	Q19828.1uHAST	0/77

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: 48 hrs @ 125°C, Unbiased Soak: 96 hrs @ 30°C, 60%RH, Reflow: 3 passes through an oven with a peak temperature of 245°C.

Approvals

Reliability Engineer: Lay Yong Ong