Product Change Notification / LIAL-04DLCO554

Date:

07-Oct-2021

Product Category:

Microprocessors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4830 Initial Notice: Qualification of ATK as an additional assembly site for selected ATSAMA5D26 and ATSAMA5D27 device families available in 289L LFBGA (14x14x1.4mm) package.

Affected CPNs:

LIAL-04DLCO554_Affected_CPN_10072021.pdf
LIAL-04DLCO554_Affected_CPN_10072021.csv

Notification Text:

PCN Status: Initial notification.

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the files found in the Affected CPNs section.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change: Qualification of ATK as an additional assembly site for selected ATSAMA5D26 and ATSAMA5D27 device families available in 289L LFBGA (14x14x1.4mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Inc (ASE)	ASE Inc (ASE	Amkor Technology Korea (K4), INC (ATK)

Wire material	CuPdAu	CuPdAu	CuPdAu
Die attach material	2100AS	2100AS	EP Ablebond 2300
Molding compound material	KE-G1250LKDS	KE-G1250LKDS	G770FE
Substrate SM material	AUS308	AUS308	AUS308
Substrate Core material	CCL-HL832NX(A-HS)	CCL-HL832NX(A-HS)	HL832NXAHS

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve on-time delivery performance by qualifying ATK as an additional assembly site.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: April 2022

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	October 2021					**-->**	**April 2022**				
Workweek	40	41	42	43	44		14	15	16	17	18
Initial PCN Issue Date		X									
Qual Report Availability											X
Final PCN Issue Date											X

Method to Identify Change: Traceability code

Qualification Plan: Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History:October 07, 2021: Issued initial notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

PCN_LIAL-04DLCO554_Qual Plan.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the PCN FAQ section.

If you wish to change your PCN profile, including opt out, please go to the PCN home page select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

QUALIFICATION PLAN SUMMARY

PCN#: LIAL-04DLCO554

Date
September 30, 2021

Qualification of ATK as an additional assembly site for selected ATSAMA5D26 and ATSAMA5D27 device families available in 289L LFBGA (14x14x1.4mm) package. This is Q006 grade 2 qualification.

Purpose: Qualification of ATK as an additional assembly site for selected ATSAMA5D26 and ATSAMA5D27 device families available in 289L LFBGA (14x14x1.4mm) package. This is Q006 grade 2 qualification.

Misc.	Assembly site	ATK
	BD Number	BD-000187/01 (ATK-0859860WB)
	MP Code (MPC)	92U037AMBC05
	Part Number (CPN)	ATSAMA5D27C-CU
	MSL information	MSL 3 / 260
	Assembly Shipping Media (T/R, Tube/Tray)	Tray: JT1141401-07 REV.A
	Base Quantity Multiple (BQM)	116
	Reliability Site	MPHIL
	CCB No.	4830
Substrate	Core Material	HL832NXAHS
	Core Thickness	0.150 +/- 0.030 mm
	L1/L2 Thickness	Min 0.012mm
	SM Material	AUS308
	Process	EBS (MEBS)
	Part Number	101420997
	Paddle Size	7.265x7.265mm
	Drill Size	0.100mm
	Line/Space Specs	0.045mm / 0.045mm
Bond Wire	Material	CuPdAu
Die Attach	Part Number	EP Ablebond 2300
	Conductive	Conductive
MC	Part Number	G770FE
PKG	PKG Type	LFBGA
	Pin/Ball Count	289 Balls
	PKG width/size	14x14x1.4mm
	Ball Pitch/Size	0.8mm
	Solder Ball Material	98.25SN/1.2AG/0.5CU/0.05NI

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours of steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.			22	5	1	27	>95% lead coverage	5	MPHIL	MPHIL	LFBGA	Standard Pb-free solderability is the requirement.
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0 fails after TC	5	MPHIL	MPHIL	LFBGA	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5	0	5	MPHIL	MPHIL	LFBGA	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5	MPHIL	MPHIL	LFBGA	
Solder Ball Shear (For BGA device only)	AEC Q100-010 AEC Q003			10	0	3	30	0	5	MPHIL	MPHIL	LFBGA	5 balls from a min. of 10 devices. Not required for SMD, only required for BGA devices.
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5	MPHIL	MPHIL	LFBGA	
HTSL (High Temp Storage Life)	JESD22-A103 +150°C *2x Stress*	1st Readpoint: Grade 2: 500 hrs (150°C) 2nd Readpoint: Grade 2: 1000 hrs (150°C)	Grade 2: +25°C, +105°C	45	5	3	150	0	21 - 167	MPHIL	MPHIL	LFBGA	Perform per the requirements in AEC-Q100/Q101. Spares should be properly identified.

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
Preconditioning - Required for surface mount devices	J-STD-020 JESD22-A113 +150°C Bake for 24 hours, moisture loading requirements per MSL level 3 + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type. MSL 3, 260C		Grade 2: +25°C	231	15	3	738	0	15	MPHIL	MPHIL	LFBGA	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	JESD22-A101 or A110 +110°C/85%RH for 264 hrs *2x Stress*	1st Readpoint: Grade 2: 264 hrs (+110°C/85%RH) 2nd Readpoint: Grade 2: 528 hrs (+110°C/85%RH)	Grade 2: +25°C, +105°C	77	5	3	246	0	10 - 22	MPHIL	MPHIL	LFBGA	Perform per the requirements in AEC-Q006. Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
uHAST	JESD22-A102, A118, or A101 +110°C/85% RH for 264 hrs + 264 hrs.	Grade 2: 264 hrs (+110°C/85% RH)	Grade 2: +25°C	77	5	3	246	0	10	MPHIL	MPHIL	LFBGA	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	JESD22-A104 and -55ºC to +125ºC	1st Readpoint: Grade 2: 1000 cycles (-55ºC to +125ºC) 2nd Readpoint: Grade 2: 2000 cycles (-55ºC to +125ºC)	Grade 2: +105°C	77	5	3	246	0	15 - 120	MPHIL	MPHIL	LFBGA	Perform per the requirements in AEC-Q006. Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Affected Catalog Part Numbers (CPN)

ATSAMA5D26C-CU
ATSAMA5D27C-CU
ATSAMA5D26C-CN
ATSAMA5D27C-CN
ATSAMA5D26C-CNR
ATSAMA5D27C-CNR
ATSAMA5D26C-CNR01
ATSAMA5D26C-CUR
ATSAMA5D27C-CUR