Product Change Notification / CAAN-12DLTL031

Date:

25-May-2023

Product Category:

Microprocessors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6010 Final Notice: Qualification of ASEK as an additional assembly site for selected AT91SAM9G45xx, AT91SAM9G46xx, AT91SAM9M10xx and AT91SAM9M11xx device families available in 324L TFBGA (15x15x1.2mm) package.

Affected CPNs:

CAAN-12DLTL031_Affected_CPN_05252023.pdf
CAAN-12DLTL031_Affected_CPN_05252023.csv

Notification Text:

PCN Status: Final 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 ASEK as an additional assembly site for selected AT91SAM9G45xx, AT91SAM9G46xx, AT91SAM9M10xx and AT91SAM9M11xx device families available in 324L TFBGA (15x15x1.2mm) package.
Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site	ATX Semiconductor (Shanghai)Co. Ltd (ASSH)	ATX Semiconductor (Shanghai)Co. Ltd (ASSH)	ASE Inc. (ASEK)
Substrate Core Material	CCL-HL832NX	CCL-HL832NX	CCL-HL832NX(A-HS)
SM Material	PSR 4000 AUS-308	PSR 4000 AUS-308	PSR4000 AUS308
Die Attach Material	2100AS	2100AS	2100AC
Wire Material	CuPd	CuPd	CuPdAu
Molding Compound Material	KE-G1250LKDS	KE-G1250LKDS	KE-G1250NAS

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying ASEK as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: June 26, 2023 (date code: 2326)

Note: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

	December 2022					**>**	**May 2023**					**June 2023**				
Workweek	49	50	51	52	53		18	19	20	21	22	22	23	24	25	26
Initial PCN Issue Date			x													
Qual Report Availability										x						
Final PCN Issue Date										x						
Estimated Implementation Date																x

Method to Identify Change: Traceability code

Qualification Report: Please open the attachments included with this PCN labeled as

PCN_#_Qual_Report.

Revision History: December 14, 2022: Issued initial notification.
May 25, 2023: Issued final notification. Attached the Qualification Report. Revised Affected CPN List to remove AT91SAM9M10C-CU-100, AT91SAM9G46B-CU-101, AT91SAM9M10C-CU-101. Provided estimated first ship date to be on June 26, 2023.

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

Attachments:

PCN_CAAN-12DLTL031_Qual_Report.pdf

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

Terms and Conditions:

Affected Catalog Part Numbers (CPN)

AT91SAM9G45B-CU
AT91SAM9M10C-CU
AT91SAM9G45C-CU
AT91SAM9G46B-CU
AT91SAM9M11B-CU
AT91SAM9G45C-CU-999
AT91SAM9M10C-CU-999

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: CAAN-12DLTL031

Date:
May 17, 2023

Qualification of ASEK as an additional assembly site for selected AT91SAM9G45xx, AT91SAM9G46xx, AT91SAM9M10xx and AT91SAM9M11xx device families available in 324L TFBGA (15x15x1.2mm) package.

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PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of ASEK as an additional assembly site for selected AT91SAM9G45xx, AT91SAM9G46xx, AT91SAM9M10xx and AT91SAM9M11xx device families available in 324L TFBGA (15x15x1.2mm) package.**
CN	E000153058
QUAL ID	R2300342 Rev. A
MP CODE	910087BJBC09
Part No.	AT91SAM9G45C-CU
Bonding No.	BD-001200 Rev. 01
CCB No.	6010
Package	
Type	324L TFBGA
Package size	15 x 15 x 1.2 mm
Substrate	
Core Material	CCL-HL832NX(A-HS)
Core Thickness (um)	60+/-15
SM Material	PSR4000 AUS308
Process	Normal
Drill Size (um)	150
Part Number	A31482-0
Material	
Epoxy	2100AC
Wire	CuPdAu wire
Mold Compound	KE-G1250NAS

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
ASE-233800004.000	U12A923335390.100	2251D45
ASE-233900001.000	U12A923335390.100	2252D4R
ASE-233900002.000	U12A923335390.100	2252D4S

Result ☒ Pass ☐ Fail ☐ ____________________

32L TFBGA (15x15x1.2 mm) assembled by ASE pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests **(At MSL Level 3)**	**Electrical Test:** +25°C and 85°C System: D10I_UC	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs. System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		0/693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH			0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +25°C and 85°C System: D10I_UC		693(0)	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -55°C to +125°C, 1000 Cycles System: VOTSCH VT³ 7012 S2	JESD22-A104		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C System: D10I_UC		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>4.00 grams)		15(0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +110°C/85%RH, 264 hrs. System: HIRAYAMA PC 422R8	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: D10I_UC		231(0)	0/231	Pass	77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 150°C, 504 hrs. System: SHEL LAB	JESD22-A103		0/135		45 units / lot
	Electrical Test: +25°C and 85°C System: D10I_UC		135(0)	0/135	Pass	
	Stress Condition: Bake 150°C, 1008 hrs. System: SHEL LAB			0/135		
	Electrical Test: +25°C and 85°C System: D10I_UC		135(0)	0/135	Pass	
Coplanarity	Coplanarity 5 units / lot	JESD22B108A/POD	15(0) Wires	0/15	Pass	
Solder Ball Shear	Solder Ball Shear 5 balls from a min. of 10 devices.	AEC Q100-010 AEC Q003	30(0)	0/30	Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>4.00 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>10.00 grams)	CDF-AEC-Q100-001	30(0) bonds	0/30	Pass	