Product Change Notification / ALAN-08KOOJ271

Date:

04-Aug-2022

Product Category:

32-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4767 Final Notice: Qualification of ANAP as an additional assembly site for selected Atmel AT91SAM7S1xx and AT91SAM7S2xx device families in 64L LQFP (10x10x1.4mm) package.

Affected CPNs:

ALAN-08KOOJ271_Affected_CPN_08042022.pdf
ALAN-08KOOJ271_Affected_CPN_08042022.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 ANAP as an additional assembly site for selected Atmel AT91SAM7S1xx and AT91SAM7S2xx device families in 64L LQFP (10x10x1.4mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly location		ASE Inc. (ASEK)	ASE Inc. (ASEK)	Amkor Technology Philippine (P1/P2), INC. (ANAP)
Bond wire material		CuPdAu	CuPdAu	CuPdAu
Die attach material		CRM-1076WA	CRM-1076WA	3230
Mold compound material		G631HQ	G631HQ	G631HQ
Lead-frame	**Material**	C7025	C7025	C194
	Process	Stamped	Stamped	Etched
	Paddle Size	250x250 mils	250x250 mils	295x295 mils
	See pre and post change comparison			

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve productivity by qualifying ANAP as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: September 1, 2022 (date code: 2236)

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

Time Table Summary:

	August 2022				**September 2022**				
Workweek	32	33	34	35	36	37	38	39	40
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:

July 27, 2021: Issued initial notification
August 25, 2021: Re-issued initial notification to update the molding compound material from G700Y to G631HQ for ANAP assembly site in PCN letter and Qual plan. Updated the Pre and Post change comparison file to reflect the lead frame information only for ASEK and ANAP.
August 4, 2022: Issued final notification. Qualification report attached. Provided estimated first ship date to be on September 1, 2022.

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

Attachments:

PCN_ALAN-08KOOJ271_Pre and Post Change_Summary.pdf
PCN_ALAN-08KOOJ271_Qual_Report.pdf

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

Terms and Conditions:

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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.

Affected Catalog Part Numbers (CPN)

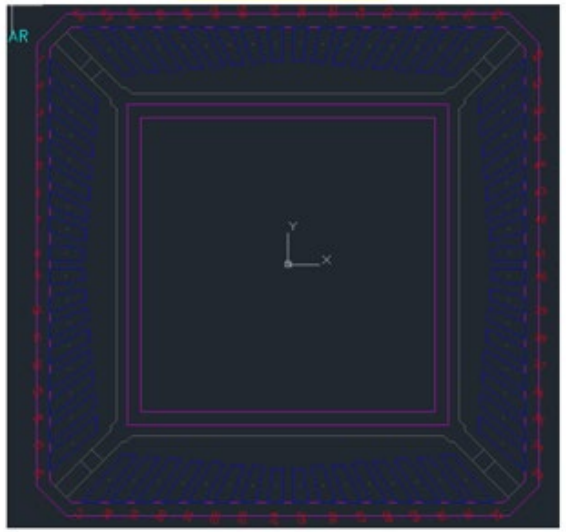
AT91SAM7S128D-AU
AT91SAM7S256D-AU
AT91SAM7S256D-AU-999
AT91SAM7S128D-AU-999

CCB 4767
Pre and Post Change Summary
PCN# ALAN-08KOOJ271

A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

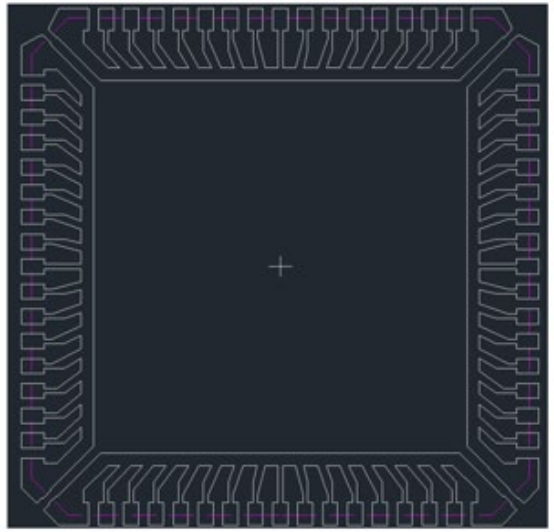
Pre and Post Change Summary

Pre Change



Assembly location		ASE Inc. (ASEK)
Die attach material		CRM-1076WA
Mold compound material		G631HQ
Lead frame material	**Material**	C7025
	Process	Stamped

Post Change



Assembly location		Amkor Technology Philippine (P1/P2), INC. (ANAP)
Die attach material		3230
Mold compound material		G631HQ
Lead frame material	**Material**	C194
	Process	Etched

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN#: ALAN-08KOOJ271

Date:
July 26, 2022

Qualification of ANAP as an additional assembly site for selected Atmel AT91SAM7S1xx and AT91SAM7S2xx device families in 64L LQFP (10x10x1.4mm) package

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Package Qualification Report

Purpose: Qualification of ANAP as an additional assembly site for selected Atmel AT91SAM7S1xx and AT91SAM7S2xx device families in 64L LQFP (10x10x1.4mm) package.

Misc.	Assembly site	ANAP
	BD Number	TBD
	MP Code (MPC)	58Z187V6XC04
	Part Number (CPN)	AT91SAM7S256D-AU
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	101327506
	Base Quantity Multiple (BQM)	Tray - 160 T& R - 1500
	Reliability Site	MPHIL
	CCB	4767
Lead- Frame	Paddle size	295X295 mils
	Material	C194
	DAP Surface Prep	Double Ring Plating
	Treatment	N/A
	Process	Etched
	Lead-lock (With Locking Holes)	No
	Part Number	101387176
	Lead Plating	Matte Sn
	Strip Size	250x70
	Strip Density	56 units/strip
Bond Wire	Material	CuPdAu
Die Attach	Part Number	3230
	Conductive	Yes
MC	Part Number	G631HQ
PKG	PKG Type	LQFP
	Pin/Ball Count	64L
	PKG width/size	10x10x1.4mm

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Package Qualification Report

Manufacturing Information

Assembly Lot No.	Qty IN	Qty Out
ANAP222400116.000	1410	1367
ANAP222400117.000	1079	1042
ANAP222400115.000	1426	1395

Result ☑ Pass ☐ Fail ☐ _____

58Z187V6XC04 in LQFP 64 10x10x1.4mm package from ANAP pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package is qualified 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** Magnum	JESD22-A113, JIP/ IPC/JEDEC J-STD-020E	231 per lot	Lot 1 0/231 Lot 2 0/231 Lot 3 0/231	Pass Pass Pass	Good Devices
	Bake 150°C, 24 hrs System: HERAEUS		231 per lot			
	Moisture Soak 192h(30°C/60%RH) System: Climats Excal 5423-HE		231 per lot			
	Reflow 3x Convection-Reflow 265°C max System: Mancorp CR.5000F		231 per lot	Lot 1 0/231 Lot 2 0/231 Lot 3 0/231	Pass Pass Pass	
	Electrical Test :25°C Magnum SV 1024		231 per lot	Lot 1 0/231 Lot 2 0/231 Lot 3 0/231	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED HAST	**Stress Condition:** (Standard) + 130°C, 85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C System: Magnum	JESD22-A118	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
	Stress Condition: (Standard) + 130°C, 85%RH, 192 hrs. System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C System: Magnum	JESD22-A118	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	
	Internal Package Analysis		5 units per lot	Lot 1, 0/5 Lot 2, 0/5 Lot 3, 0/5	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	**Stress Condition:** (Standard) 130°C, 85%RH, 96 hrs. VOLTS=3.6 System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C System: Magnum	JESD22-A110	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	
	Stress Condition: (Standard) 130°C, 85%RH, 192 hrs. VOLTS=3.6V System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C System: Magnum	JESD22-A110	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	
	Internal Package Analysis		5 units per lot	Lot 1, 0/5 Lot 2, 0/5 Lot 3, 0/5	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Temp Cycle	**Stress Condition:** (Standard) - 65°C/150°C, 500 Cycles System : Votsch VTS^{2}7012 **Electrical Test:** 25°C System: Magnum	JESD22-A104	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
	Stress Condition: (Standard) - 65°C/150°C, 1000 Cycles System : Votsch VTS^{2}7012 **Electrical Test:** 25°C System: Magnum	JESD22-A104	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	
	Internal Package Analysis		5 units per lot	Lot 1, 0/5 Lot 2, 0/5 Lot 3, 0/5	Pass Pass Pass	
	Bond Strength: **System:** Dage Wire Bond Pull (> 2 grams) Wire Ball *Shear (>9.1 grams)* System: Dage		5 units, 30 bonds per lot	Lot 1 0/30 Lot 2 0/30 Lot 3 0/30	Pass Pass Pass	
High Temperature Storage Life	**Stress Condition:** Bake 150°C, 1000 hrs System: HERAEUS **Electrical Test:** 25°C System: Magnum	JESD22-A103	45 units per lot	Lot 1 0/45 Lot 2 0/45 Lot 3 0/45	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Bond Strength, 0 Hour	**Bond Strength:** **System:** Dage Wire Bond Pull (> 2 grams) Wire Ball *Shear (>9.1 grams)* System: Dage		5 units, 30 bonds per lot	Lot 1 0/30 Lot 2 0/30 Lot 3 0/30	Pass Pass Pass	
Solderability	**Bake:** Temp 155°C,4Hrs System: Oven Solder Bath: Temp.245°C Solder material: SAC305 Visual Inspection: External Visual Inspection	J-STD-002D	22 units from 1 lot	0/22	Pass	
Physical Dimension		JESD22 B100 and B108	10 units per lot	Lot 1 9.8 Lot 2 09.8 Lot 3 9.8	Pass Pass Pass	