Product Change Notification / ALAN-11ELYX284

Date:

08-Dec-2022

Product Category:

32-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4768 Final Notice: Qualification of ANAP as an additional assembly site for selected Atmel ATSAMG55J19A and ATSAMG55J19B device families available in 64L LQFP (10x10x1.4mm) package.

Affected CPNs:

ALAN-11ELYX284_Affected_CPN_12082022.pdf
ALAN-11ELYX284_Affected_CPN_12082022.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 ATSAMG55J19A and ATSAMG55J19B device families available in 64L LQFP (10x10x1.4mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly location		ASE Inc. (ASE)	ASE Inc. (ASE)	Amkor Technology Philippine (P1/P2), INC. (ANAP)
Bond wire material		CuPdAu	CuPdAu	CuPdAu
Die attach material		CRM-1076WA	CRM-1076WA	3230
Mold compound material		G631H	G631H	G631HQ
Lead-frame	**Material**	C7025	C7025	C194
	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: January 31, 2022 (date code: 2206)

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

Time Table Summary:

	July 2021					**>**	**January 2022**					**>**	**May 2022**					**>**	**December 2022**				
Workweek	27	28	29	30	31		2	3	4	5	6		18	19	20	21	22		49	50	51	52	53
Initial PCN Issue Date					x																		
Qual Report Availability																				x			
Final PCN							x																

Issue Date																							
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 31, 2021: Re-issued initial notification to update the mold compound material from G700Y to G631HQ for ANAP assembly site in PCN letter and Qual plan. Updated the Pre and Post change file to reflect the lead frame information only for ASE and ANAP.
January 6, 2022: Issued final notification. Updated the estimated qualification completion date to be on May 13, 2022. Provided the estimated first ship date to be on January 31, 2022.
December 8, 2022: Re-issued final notification to attach the Qualification Report. Updated the time table summary to reflect qual report availability.

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-11ELYX284_Qual Report.pdf
PCN_ALAN-11ELYX284 - Pre and Post Change_Summary.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.

Affected Catalog Part Numbers (CPN)

ATSAMG55J19A-AU
ATSAMG55J19B-AU
ATSAMG55J19A-AUT
ATSAMG55J19B-AUT

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: ALAN-11ELYX284

Date:
November 23, 2022

Qualification of ANAP as an additional assembly site for selected Atmel ATSAMG55J19A and ATSAMG55J19B device families available 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 ATSAMG55J19A and ATSAMG55J19B device families available in 64L LQFP (10x10x1.4mm) package

Misc.	Assembly site	ANAP
	MP Code (MPC)	651057V6XC02
	Part Number (CPN)	ATSAMG55J19B-AU
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	101327506 (Daewon)
	Base Quantity Multiple (BQM)	Tray - 160 T& R - 1500
	Reliability Site	MPHIL
	Qual ID	REQ2200235 Rev A
	CCB No.	4768
Lead-Frame	Paddle size	138X138 mils
	Material	C194
	DAP Surface Prep	Double Ring Plating
	Process	Stamped
	Lead-lock (With Locking Holes)	No
	Part Number	101387045
	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.
ANAP222400112.000
ANAP222400113.000
ANAP222400114.000

Result ☑ Pass ☐ Fail ☐ With observation ________________

Qualification of 65105 mask UMC 65nm in 64L LQFP 10x10x1.4mm at ANAP (Full Qual data) pass reliability test per AEC-Q006 which was conducted at MPHL rel lab. This package 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 :** 90°C System: D10 Tester / Thermo Bake 150°C, 24 hrs System: HERAEUS 30°C/60%RH Moisture Soak 192hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 260°C max System: Mancorp CR.5000F **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A113 IPC/JEDEC J-STD-020E	231 units per lot	Lot 1 0/265 Lot 2 0/265 Lot 3 0/265	Pass Pass Pass	
Temperature Cycle	**Stress Condition:** (Standard) -65°C to +150°C, **500 Cycles** System: Votsch VTS^{2}7012 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A104	77 units per lot	Lot 1 0/90 Lot 2 0/90 Lot 3 0/90	Pass Pass Pass	
	Bond Strength: 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def /SS	Result	Remarks
Temperature Cycle	**Stress Condition:** (Standard) -65°C to +150°C, **1000 Cycles** System: Votsch VTS^{2}7012 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A104	70 units per lot	Lot 1 0/79 Lot 2 0/79 Lot 3 0/79	Pass Pass Pass	
	Bond Strength: 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	
HAST	**Stress Condition:** (Standard) +130°C/85%RH, **96 hrs** System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	77 units per lot	Lot 1 0/90 Lot 2 0/90 Lot 3 0/90	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
HAST	**Bond Strength:** 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	
	Stress Condition: (Standard) +130°C/85%RH, **192 hrs** System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	77 units per lot	Lot 1 0/79 Lot 2 0/79 Lot 3 0/79	Pass Pass Pass	
	Bond Strength: 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	
UHAST	**Stress Condition:** (Standard) +130°C/85%RH, **96 hrs**. no bias System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	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**. no bias System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	70 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HTSL	**Stress Condition:** Bake 150°C, **504 hrs.** System: HERAEUS **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A10	45 units per lot	Lot 1 0/60 Lot 2 0/60 Lot 3 0/60	Pass Pass Pass	
	Stress Condition: Bake 150°C, **1008 hrs.** System: HERAEUS **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A103	44 units per lot	Lot 1 0/49 Lot 2 0/49 Lot 3 0/49	Pass Pass Pass	
	Internal Package Analysis / Cross-section		5 units per lot	Lot 1 0/5 Lot 2 0/5 Lot 3 0/5	Pass Pass	
Bond Strength	Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		5 units 3 lots 30 bonds		Pass	
Physical Dimension	Physical Dimension, 10 units per 3 lots	JESD22 B100 and B108	10 units per lot	30	Pass	

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: ALAN-11ELYX284

Date:
November 23, 2022

Qualification of ANAP as an additional assembly site for selected Atmel ATSAMG55J19A and ATSAMG55J19B device families available 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 ATSAMG55J19A and ATSAMG55J19B device families available in 64L LQFP (10x10x1.4mm) package

Misc.	Assembly site	ANAP
	MP Code (MPC)	651057V6XC02
	Part Number (CPN)	ATSAMG55J19B-AU
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	101327506 (Daewon)
	Base Quantity Multiple (BQM)	Tray - 160 T& R - 1500
	Reliability Site	MPHIL
	Qual ID	REQ2200235 Rev A
	CCB No.	4768
Lead-Frame	Paddle size	138X138 mils
	Material	C194
	DAP Surface Prep	Double Ring Plating
	Process	Stamped
	Lead-lock (With Locking Holes)	No
	Part Number	101387045
	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.
ANAP222400112.000
ANAP222400113.000
ANAP222400114.000

Result ☑ Pass ☐ Fail ☐ With observation

Qualification of 65105 mask UMC 65nm in 64L LQFP 10x10x1.4mm at ANAP (Full Qual data) pass reliability test per AEC-Q006 which was conducted at MPHL rel lab. This package 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 :** 90°C System: D10 Tester / Thermo Bake 150°C, 24 hrs System: HERAEUS 30°C/60%RH Moisture Soak 192hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 260°C max System: Mancorp CR.5000F **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A113 IPC/JEDEC J-STD-020E	231 units per lot	Lot 1 0/265 Lot 2 0/265 Lot 3 0/265	Pass Pass Pass	
Temperature Cycle	**Stress Condition:** (Standard) -65°C to +150°C, **500 Cycles** System: Votsch VTS^{2}7012 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A104	77 units per lot	Lot 1 0/90 Lot 2 0/90 Lot 3 0/90	Pass Pass Pass	
	Bond Strength: 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def /SS	Result	Remarks
Temperature Cycle	**Stress Condition:** (Standard) -65°C to +150°C, **1000 Cycles** System: Votsch VTS^{2}7012 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A104	70 units per lot	Lot 1 0/79 Lot 2 0/79 Lot 3 0/79	Pass Pass Pass	
	Bond Strength: 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	
HAST	**Stress Condition:** (Standard) +130°C/85%RH, **96 hrs** System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	77 units per lot	Lot 1 0/90 Lot 2 0/90 Lot 3 0/90	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
HAST	**Bond Strength:** 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	
	Stress Condition: (Standard) +130°C/85%RH, **192 hrs** System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	77 units per lot	Lot 1 0/79 Lot 2 0/79 Lot 3 0/79	Pass Pass Pass	
	Bond Strength: 3 units per test Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		6 units per lot	Lot 1 0/6 Lot 2 0/6 Lot 3 0/6	Pass Pass Pass	
UHAST	**Stress Condition:** (Standard) +130°C/85%RH, **96 hrs**. no bias System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	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**. no bias System: HIRAYAMA HASTEST PC-422R8 **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A118	70 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HTSL	**Stress Condition:** Bake 150°C, **504 hrs.** System: HERAEUS **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A10	45 units per lot	Lot 1 0/60 Lot 2 0/60 Lot 3 0/60	Pass Pass Pass	
	Stress Condition: Bake 150°C, **1008 hrs.** System: HERAEUS **Electrical Test :** 90°C System: D10 Tester / Thermo	JESD22-A103	44 units per lot	Lot 1 0/49 Lot 2 0/49 Lot 3 0/49	Pass Pass Pass	
	Internal Package Analysis / Cross-section		5 units per lot	Lot 1 0/5 Lot 2 0/5 Lot 3 0/5	Pass Pass	
Bond Strength	Wire Pull (>4.0g) Bond *Shear* (>10g) Stitch Pull (>3g) System: Dage		5 units 3 lots 30 bonds		Pass	
Physical Dimension	Physical Dimension, 10 units per 3 lots	JESD22 B100 and B108	10 units per lot	30	Pass	

Affected Catalog Part Numbers (CPN)

ATSAMG55J19A-AU
ATSAMG55J19B-AU
ATSAMG55J19A-AUT
ATSAMG55J19B-AUT

CCB 4768

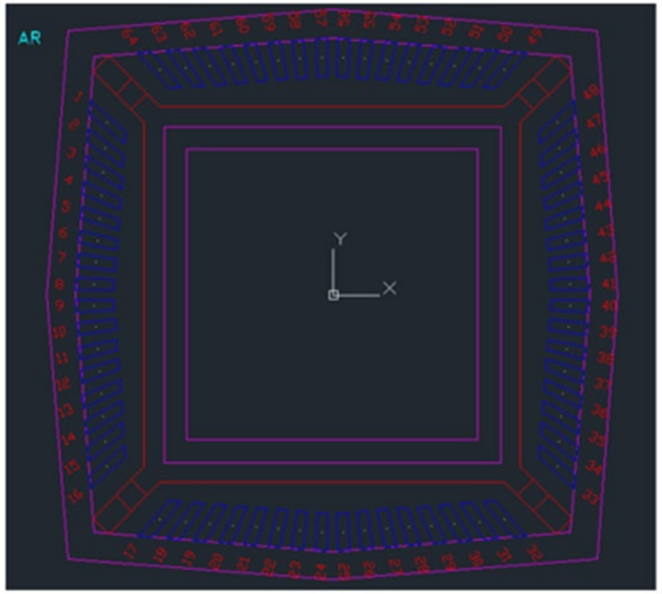
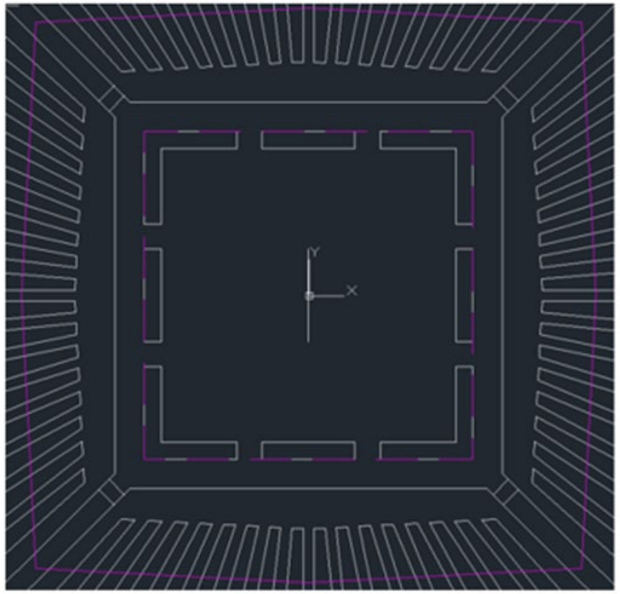
Pre and Post Change Summary

PCN# ALAN-11ELYX284

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

SMART | CONNECTED | SECURE

Pre and Post Change Summary

Pre Change	Post Change
 **Assembly location**: ASE Inc. (ASE) **Lead frame material**: C7025 **Lead frame paddle size**: 200x200 mils	 **Assembly location**: Amkor Technology Philippine (P1/P2), INC. (ANAP) **Lead frame material**: C194 **Lead frame paddle size**: 138x138 mils

Assembly location	ASE Inc. (ASE)
Lead frame material	C7025
Lead frame paddle size	200x200 mils

Assembly location	Amkor Technology Philippine (P1/P2), INC. (ANAP)
Lead frame material	C194
Lead frame paddle size	138x138 mils