Product Change Notification / CAAN-15ZTGE821

Date:

17-Nov-2022

Product Category:

Microprocessors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3431.001 Final Notice: Qualification of ASEK as an additional assembly site for selected AT91SAM9Gxx and AT91SAM9Xxx device families available in 217L LFBGA (15x15x1.46mm) package.

Affected CPNs:

CAAN-15ZTGE821_Affected_CPN_11172022.pdf
CAAN-15ZTGE821_Affected_CPN_11172022.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 AT91SAM9Gxx and AT91SAM9Xxx device families available in 217L LFBGA (15x15x1.46mm) 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)
Wire Material	CuPd	CuPd	CuPdAu
Die Attach Material	2100AS	2100AS	2100AC
Molding Compound Material	KE-G1250LKDS	KE-G1250LKDS	KE-G1250NAS
Substrate Core Material	CCL-HL832NX	CCL-HL832NX	CCL-HL832NX(A-EX)

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: December 31, 2022 (date code: 2253)

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

Time Table Summary:

	November 2022					**December 2022**			
Workweek	45	46	47	48	49	50	51	52	53
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: November 17, 2022: Issued final 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_CAAN-15ZTGE821_Qual Report.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.

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: CAAN-15ZTGE821

Date
January 28, 2018

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire, 2100AC die attach and KE-G1250NAS mold compound in selected products available in 217L LFBGA package at ASE assembly site. The qualification of ASEK as an additional assembly site for selected AT91SAM9Gxx and AT91SAM9Xxx device families available in 217L LFBGA (15x15x1.46mm) package will qualify by similarity (QBS).

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PACKAGE QUALIFICATION REPORT

Purpose: **Qualification of palladium coated copper with gold flash (CuPdAu) bond wire, 2100AC die attach and KE-G1250NAS mold compound in selected products available in 217L LFBGA package at ASE assembly site. The qualification of ASEK as an additional assembly site for selected AT91SAM9Gxx and AT91SAM9Xxx device families available in 217L LFBGA (15x15x1.46mm) package will qualify by similarity (QBS).**

CCB No.: **3431.001**

Misc.	Assembly site	ASE
	BD Number	BD_91001_CGF_14_C_2.0
	MP Code (MPC)	910017ATBC04
	Part Number (CPN)	91SAM9G20B-CU
Substrate	Core Material	HL832NX-A
	BGA Composition	NiAu
	SM Material	AUS308
Bond Wire	Material	CuPdAu
Die Attach	Conductive	Conductive
	Part Number	2100AC
Mold Compound	Part Number	KE-G1250NAS
PKG	PKG Type	LFBGA
	Pin/Ball Count	217
	PKG width/size	15x15 mm
	Ball Pitch	0.80 mm
Solder ball	Composition	98.5SN/1.0AG/0.5CU (SAC105)
	Ball size	0.4mm diameter

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
ASE-191400083.000	U12A919107007.000	1827
ASE-191400085.000	U12A919107007.000	1827
ASE-191400088.000	U12A919107007.000	1827

Result ☑ Pass ☐ Fail ☐ _____

Standard BOM for LFBGA217 package 15x15x1.4mm for 91K devices with PdCuAu wire in ASE passed all Package Reliability testing with Moisture/Reflow Sensitivity Classification Level 3 at 260C reflow temperature per IPC/JEDEC J-STD-020D standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/S S	Result	Remarks
Precondition Prior Perform Reliability Tests (At MSL Level 3)	**Electrical Test :** 25°C, 85°C System: D10 Tester / Thermonics	JESD22-A113	539(0)	0/539		3 lots. Good Devices
	Bake 125°C, 24 hrs System: HERAEUS		539(0)	0/539		
	30°C/60%RH Moisture Soak 192 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D	539	0/539		
	3x Convection-Reflow 265°C max System: Mancorp CR.5000F		539	0/539		
	Electrical Test :25°C, 85°C System: D10 Tester / Thermonics		539	0/539	PASS	3 lots.
Temp Cycle -55°C to +125°C	**Stress Condition:** (Standard) -55°C to +125°C, 500 Cycles System : VOTSCH	JESD22-A104	270	0/270		3 lots. Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C (3 lots) System: D10 Tester / Thermonics		270	0/270	PASS	
	Bond Strength: Wire Pull (> 2.50 grams) Bond *Shear (>15.00 grams)*		15	0/15	PASS	
UNBIASED-HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	269	0/269		3 lots. Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: D10 Tester / Thermonics		269	0/269	PASS	3 lots
	Bond Strength: Wire Pull (> 2.50 grams) Bond *Shear (>15.00 grams)*		15	0/15	PASS	
HIGH TEMPERATURE STORAGE LIFE	**Stress Condition:** Bake 175°C, 500 hrs System: HERAEUS	JESD22-A103	180	0/180		3 lots.
	Electrical Test: 25°C, 85°C System: D10 Tester / Thermonics		180	0/180	PASS	3 lots.
	Bond Strength: Wire Pull (> 2.50 grams) Bond *Shear (>15.00 grams)*		15	0/15	PASS	3 lots.
Bond Strength Data Assembly	Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)	M2011.8 MIL-STD-883	30 (0) wires	0/30	PASS	
Physical Dimensions	Physical Dimension, 10 units per 3 lots	JESD22-B100/B108	10 (0) units	0/10	PASS	Performed at Subcon

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Affected Catalog Part Numbers(CPN)

AT91SAM9G35-CU
AT91SAM9G25-CU
AT91SAM9X25-CU
AT91SAM9X35-CU
AT91SAM9G15-CU
AT91SAM9G25-CU-999
AT91SAM9G35-CU-999
AT91SAM9X25-CU-999
AT91SAM9G15-CU-999
AT91SAM9X35-CU-999