



## Product Change Notification - KSRA-25BPKT420

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**Date:**

15 Apr 2019

**Product Category:**

32-bit Microcontrollers

**Affected CPNs:****Notification subject:**

CCB 3467 Final Notice: Qualification of a new lead frame with double ring plating on paddle for selected Atmel products of 58.85K wafer technology available in 48L TQFP (7x7x1.0mm) package at ASE assembly site using palladium coated copper with gold flash (CuPdAu) bond wire

**Notification text:****PCN Status:**

Final notification.

**PCN Type:**

Manufacturing Change

**Microchip Parts Affected:**

Please open one of the icons found in the Affected CPNs section above.

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

**Description of Change:**

Qualification of a new lead frame with double ring plating on paddle for selected Atmel products of 58.85K wafer technology available in 48L TQFP (7x7x1.0mm) package at ASE assembly site using palladium coated copper with gold flash (CuPdAu) bond wire

**Pre Change:**

Assembled at ASE Inc. Taiwan (ASE) using a lead frame with single ring plating on paddle palladium coated copper (CuPd) Bond wire

**Post Change:**

Assembled at ASE Inc. Taiwan (ASE) using a lead frame with double ring plating on paddle using palladium coated copper with gold flash (CuPdAu) bond wire

**Pre and Post Change Summary:**

	Pre Change	Post Change
Assembly Site	ASE Inc. (ASE)	ASE Inc. (ASE)
Wire material	CuPd	CuPdAu
Die attach material	CRM-1076WA	CRM-1076WA
Molding compound material	EME-G631H	EME-G631H
Lead frame material	C7025	C7025
Lead frame Surface	Ring	Double Ring

Note: See attached lead frame comparison

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve on-time delivery performance and qualify a new lead frame with double ring plating on paddle.

**Change Implementation Status:**

In Progress

**Estimated First Ship Date:**



May 15, 2019 (date code: 1920)

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

#### Time Table Summary:

	July 2018					-->	April 2019				May 2019				
Workweek	27	28	29	30	31		14	15	16	17	18	19	20	21	22
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:

**July 27, 2018:** Issued initial notification.

**April 15, 2019:** Issued final notification. Attached the Qualification Report. Provided estimated first ship date on May 15, 2019.

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

#### Attachment(s):

[PCN\\_KSRA-25BPKT420\\_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.

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)

ATSAM4LC2AA-AU  
ATSAM4LC2AA-AUR  
ATSAM4LC4AA-AU  
ATSAM4LC4AA-AUR  
ATSAM4LS2AA-AU  
ATSAM4LS2AA-AUR  
ATSAM4LS4AA-AU  
ATSAM4LS4AA-AUR



**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN#: KSRA-25BPKT420**

**Date:**  
**April 1, 2019**

**Qualification of a new lead frame with double ring plating on  
paddle for selected Atmel products of 58.85K wafer  
technology available in 48L TQFP (7x7x1.0mm) package at  
ASE assembly site using palladium coated copper with gold  
flash (CuPdAu) bond wire**



## MICROCHIP Package Qualification Report

Purpose: Qualification of a new lead frame with double ring plating on paddle for selected Atmel products of 58.85K wafer technology available in 48L TQFP (7x7x1.0mm) package at ASE assembly site using palladium coated copper with gold flash (CuPdAu) bond wire

<b><u>Misc.</u></b>	<b>Assembly site</b>	ASEKH
	<b>BD Number</b>	BD-M0-5791F-LCD_H BD-M0-5791F-NLCD_H
	<b>MP Code (MPC)</b>	58Z387Y8XC04
	<b>Part Number (CPN)</b>	ATSAM4LS2AA-AU
	<b>Qual Report ID and Rev</b>	QTP 3656 Rev A.
	<b>CCB No.</b>	3467
<b><u>Lead-Frame</u></b>	<b>Paddle size</b>	224.4x224.4 mils
	<b>Material</b>	C7025
	<b>Surface</b>	Double Ring
	<b>Treatment</b>	Plating
	<b>Process</b>	Etched
	<b>Lead-lock</b>	No
	<b>Part Number</b>	A14165
	<b>Lead Plating</b>	Ag
	<b>Strip Size, unit#</b>	78x250 mm 70units
	<b>Inner lead design</b>	A14165
<b><u>Bond Wire</u></b>	<b>Material</b>	CuPdAu
<b><u>Die Attach</u></b>	<b>Part Number</b>	CRM-1076WA
	<b>Conductive</b>	Yes
<b><u>MC</u></b>	<b>Part Number</b>	EME-G631H
<b><u>PKG</u></b>	<b>PKG Type</b>	TQFP
	<b>Pin/Ball Count</b>	48
	<b>PKG width/size</b>	7x7x1.0
<b><u>Die</u></b>	<b>Die Thickness</b>	9mils
	<b>Die Size</b>	176.1x171.4 mils
	<b>Fab Process (site)</b>	UMC 8"



## **MICROCHIP**

### **Package Qualification Report**

#### **Manufacturing Information**

<b>Assembly Lot No.</b>	<b>Wafer Lot No.</b>	<b>Date Code</b>
ASE-192400113.000	U08C919181231.000	37'18
ASE-192400114.000	U08C919181231.000	37'18
ASE-192400115.000	U08C919181231.000	37'18

#### **Result**



Pass



Fail



ATSAM4LS2AA-AU 58Z387Y8XC04 in TQFP48 Package using CuPdAu wire and Large Matrix Lead frame p/n : A10774 from ASKH assembly 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
<b>Moisture/Reflow Sensitivity Classification Test (At MSL Level 3)</b>	30°C/60%RH Moisture Soak 192 hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 265°C max System: Mancorp CR.5000F  ( IPC/JEDEC J-STD-020E)	IPC/JEDEC	45 units per lot	Lot 1 0/45	Pass	
				Lot 2 0/45	Pass	
				Lot 3 0/45	Pass	
<b>Precondition Prior Perform Reliability Tests (At MSL Level 3)</b>	<b>Electrical Test :85°C</b> System: Magnum  Bake 150°C, 24 hrs System: HERAEUS  30°C/60%RH Moisture Soak 192 hrs. System: Climats Excal 5423-HE  3x Convection-Reflow 265°C max System: Mancorp CR.5000F  <b>Electrical Test : 85°C</b> System: Magnum	JESD22- A113	231 units per lot	Lot 1 0/231	Pass	Good Devices
				Lot 2 0/231	Pass	
				Lot 3 0/231	Pass	
<b>UNBIASED HAST</b>	<b>Stress Condition:</b> (Standard) + 130°C, 85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8  <b>Electrical Test:</b> 85°C System: Magnum	JESD22- A110	77 units per lot	Lot 1 0/77	Pass	Parts had been pre- conditioned at 260°C
				Lot 2 0/77	Pass	
				Lot 3 0/77	Pass	
<b>Temp Cycle</b>	<b>Stress Condition:</b> (Standard) -65°C to +150°C, 500 Cycles System : Votsch VTS <sup>2</sup> 7012  <b>Electrical Test:</b> 85°C System: Magnum	JESD22- A104	77 units per lot	Lot 1, 0/77	Pass	Parts had been pre- conditioned at 260°C
				Lot 2, 0/77	Pass	
				Lot 3, 0/77	Pass	
	<b>Bond Strength:</b> Wire Pull (> 1.75 grams) Bond <i>Shear</i> (>12.6 grams) System: Dage		5 units per lot	Lot 1, 0/5	Pass	
				Lot 2, 0/5	Pass	
				Lot 3, 0/5	Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 500 hrs System: HERAEUS  <b>Electrical Test:</b> 85°C System: Magnum	JESD22-A103	45 units per lot	Lot 1 0/45	Pass	
				Lot 2 0/45	Pass	
				Lot 3 0/45	Pass	
<b>Bond Strength, 0 Hour</b>	<b>System:</b> Dage Wire Pull (> 1.75 grams) Bond <i>Shear</i> (>12.6 grams)		5 units per lot	Lot 1 0/5	Pass	
				Lot 2 0/5	Pass	
				Lot 3 0/5	Pass	
<b>PHYSICAL DIMENSIONS</b>	Physical Dimension, 30 units from 3 lots	JESD22 -B100/B108	10 units per lot	Lot 1 0/10	Pass	
				Lot 2 0/10	Pass	
				Lot 3 0/10	Pass	
<b>Solderability  Temp 245°C</b>	<b>Bake:</b> Temp 155°C,4Hrs System: Oven Solder Bath: Temp.245°C Solder material: SAC305 Visual Inspection: External Visual Inspection	JESD22B -102E	22 units On 1 lot	0/22	Pass	