



## Product Change Notification - KSRA-31AOHM485

---

**Date:**

11 Jul 2018

**Product Category:**

Memory

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

CCB 2953 Final Notice: Qualification of matte tin lead finish for selected Atmel products available in 8L SOIC at ASSH Assembly site.

**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 matte tin lead finish for selected Atmel products available in 8L SOIC at ASSH Assembly site.

**Pre Change:**

Assembled at ANAP Assembly site using 8290 die attach material, and G700 molding compound material and NiPdAu lead finish or ASSH Assembly site using EN 4900G die attach material, G700 molding compound material and NiPdAu lead finish.

**Post Change:**

Assembled at ANAP Assembly site using 8290 die attach material, and G700 molding compound material and NiPdAu lead finish or ASSH Assembly site using EN 4900G die attach material, CEL-9240HF10AK molding compound material and Matte Tin lead finish

**Pre and Post Change Summary:**

Assembly Site	Pre Change		Post Change	
	ANAP Assembly Site	ASSH Assembly Site	ANAP Assembly Site	ASSH Assembly Site
Wire material	CuPdAu Wire	CuPdAu Wire	CuPdAu Wire	CuPdAu Wire
Die attach material	8290	EN 4900G	8290	EN 4900G
Molding compound material	G700	G700	G700	CEL-9240HF10AK
Lead frame material	C194	C194	C194	C194
Lead Finish	NiPdAu	NiPdAu	NiPdAu	Matte Tin

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve manufacturability by qualifying new bill of material for ASSH assembly site.

**Change Implementation Status:**

In Progress

**Estimated First Ship Date:**



May 27, 2018 (date code: 1821)

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

**Time Table Summary:**

Workweek	June 2017					-->	April 2018				May 2018				
	22	23	24	25	26		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:**

**June 15, 2017:** Issued initial notification.

**June 20, 2017:** Re-issued initial notification to include affected parts list and qualification plan.

**June 23, 2017:** Re-issued initial notification to correct a typo on molding compound material from CEL-9240HF10AK and G700A/G700LS to G700.

**July 13, 2017:** Re-issued initial notification to include ANAP Assembly site in the post change.

**April 27, 2018:** Issued final notification. Attached the Qualification Report. Revised the affected parts list. Provided estimated first ship date on May 27, 2018.

**July 11, 2018:** Re-issued final notification to update affected CPN list.

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-31AOHM485\\_Qual\\_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

**Terms and Conditions:**

If you wish to change your product/process change notification (PCN) profile please log on to our website at <http://www.microchip.com/PCN> sign into myMICROCHIP to open the myMICROCHIP home page, then select a profile option from the left navigation bar.

To opt out of future offer or information emails (other than product change notification emails), click here to go to [microchipDIRECT](#) and login, then click on the "My account" link, click on "Update profile" and un-check the box that states "Future offers or information about Microchip's products or services."



**MICROCHIP**

## **PACKAGE QUALIFICATION SUMMARY**

**PCN#: KSRA-31AOHM485**

**Date:  
March 4, 2018**

**Qualification of matte tin lead finish for selected Atmel products available in 8L SOIC at ASSH Assembly site.**

**Purpose: Qualification of matte tin lead finish for selected Atmel products available in 8L SOIC at ASSH Assembly site.**

**CCB No.: 2953**

**MP code: 35838T3BXC03**

**Part No.: AT24CM02-SSHM-T**

**BD No: W35838SYY**

**Process/CUP: 35.5K 35.8K and 36.3K Fab5 MCSO –all the same pad structure with CUP**

<b>Subcon facility</b>	ASESH
<b>Package type/pin</b>	8ISOIC
<b>Package code</b>	C2X
<b><u>Lead frame:</u></b>	
<b>Part number</b>	LI-WSO000008-0Z
<b>Paddle size:</b>	3.89mmx2.6mm
<b>Material</b>	C194
<b>Leadframe Internal Plating (spot/ring/double ring)</b>	Ring
<b>Treatment roughened/brown oxide(BOT)/micro-etched/none</b>	None
<b>Process (Etched/Stamped)</b>	Stamped
<b>Shipped Strip/Singulated</b>	Strip
<b><u>Wire:</u></b>	
<b>Material</b>	CuPdAu
<b><u>Die Attach Epoxy:</u></b>	
<b>Part Number</b>	EN 4900G
<b>Conductive</b>	Conductive
<b><u>Mold Compound:</u></b>	
<b>Part Number</b>	CEL-9240HF10AK
<b><u>Lead finish:</u></b>	Matte tin
<b>Chemistry</b>	PureTin

## Manufacturing Information

<b>Assembly Lot No.</b>
ACS727N003
ACS727N004
ACS727N005

## Result

The 8L SOIC (0.150in) assembled by AESH pass reliability stress tests required by QCI-39000 to meet Moisture/Reflow Sensitivity Classification for Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard. All data available today supports the qualification. Physical analysis results required to complete the qualification are being pursued and will be included in a Final Report.

## Qualification Result

### Lot 1

Lot	Device Type	Test Description	AEC Q-100 Test Abbreviation & #	Criteria Fail / Min Sample	Result Fails / Pass	Comment
A7U36A73BN	24CM02-SSH-N-T 35838T3BXC03	Baseline Test +25C/ -40C/ +125C	Electrical Test			Required for AUTO Grade 1 Qual
		Moisture sensitivity JESD20 MSL level 1 Pb-Free 130C / 85% RH / 168hr Blue M FRS-265 3x Convection Reflow 265C Max Dima SMT Breeze RO-0403 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	Precondition to MSL 1 Criteria PC A1	0 Fails >=231 parts	0 / 262	Pass 25C and 125C Device Test after Preconditioning
		High Temperature Storage Life Blue M Oven	175C 504hr HTSL A6	0 Fails >=45 parts	0 / 50	Pass 25C Device Test after Stress
			175C 1008hr total HTSL A6	0 Fails >=45 parts	0 / 50	Pass 25C Device Test after Stress
		Thermal Cycles -65C to +150C Votsch VT-7012-S2 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	500cycles TC A4	0 Fails >=77 parts	0 / 90	Precondition Samples to MSL 1, then stress Pass Device Test at 25C & 125C
			Ball Shear WBS C1	> 15gm, 3 pcs	0 / 18	All wires Pass
		Bond Pull WBP C2	> 7 gm, 3 pcs	0/21		
		HAST 130°C 85%RH no bias Hirayama HASTEST PC-422 R8	96hr UHST A3	0 Fails >=77 parts	0 / 82	Precondition Samples to MSL 1, then Stress Pass Device Test at 25C & 125C
		HAST 130°C 85%RH 5.0V bias Hirayama HASTEST PC-422 R8 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	96hr HAST A4	0 Fails >=77 parts	0 / 90	Precondition Samples to MSL 1, then Stress Pass Device Test at 25C & 125C
			Ball Shear WBS C1	> 15gm, 3 pcs	0 / 18	Pass
			Bond Pull WBP C2	> 7 gm, 3 pcs	0 / 18	Pass

**Lot 2**

Lot	Device Type	Test Description	AEC Q-100 Test Abbreviation & #	Criteria Fail / Min Sample	Result Fails / Pass	Comment
A7U36A73BM	24CM02-SSHN-T 35838T3BXC03	Baseline Test +25C/ -40C/ +125C	Electrical Test			Required for AUTO Grade 1 Qual
		Moisture sensitivity JESD20 MSL level 1 Pb-Free 130C / 85% RH / 168hr Blue M FRS-265 3x Convection Reflow 265C Max Dima SMT Breeze RO-0403 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	Precondition to MSL 1 Criteria PC A1	0 Fails >=231 parts	0 / 262	Pass 25C and 125C Device Test after Preconditioning
		Thermal Cycles -65C to +150C  Votsch VT-7012-S2  Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	500cycles TC A4	0 Fails >=77 parts	0 / 90	Precondition Samples to MSL 1, then stress Pass Device Test at 25C & 125C
			Ball Shear WBS C1	> 15gm, 3 pcs	0 / 18	Pass
			Bond Pull WBP C2	> 7 gm, 3 pcs	0 / 18	Pass
			Cross Section	1 piece	Pass	
		HAST 130°C 85%RH no bias  Hirayama HASTEST PC-422 R8	96hr UHST A3	0 Fails >=77 parts	0 / 82	Precondition Samples to MSL 1, then Stress Pass Device Test at 25C & 125C
		HAST 130°C 85%RH 5.0V bias  Hirayama HASTEST PC-422 R8 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	96hr HAST A4	0 Fails >=77 parts	0 / 90	Precondition Samples to MSL 1, then Stress Pass Device Test at 25C & 125C
			Ball Shear WBS C1	> 15gm, 3 pcs		
			Bond Pull WBP C2	> 7 gm, 3 pcs	0 / 12	

**Lot 3**

Lot	Device Type	Test Description	AEC Q-100 Test Abbreviation & #	Criteria Fail / Min Sample	Result Fails / Pass	Comment
A7U36A73BJ	24CM02-SSHNT 35838T3BXC03	Baseline Test +25C/ -40C/ +125C	Electrical Test			Required for AUTO Grade 1 Qual
		Moisture sensitivity JESD20 MSL level 1 Pb-Free 130C / 85% RH / 168hr Blue M FRS-265 3x Convection Reflow 265C Max Dima SMT Breeze RO-0403 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	Precondition to MSL 1 Criteria PC A1	0 Fails >=231 parts	0 / 262	Pass 25C and 125C Device Test after Preconditioning
		Thermal Cycles -65C to +150C Votsch VT-7012-S2 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	500cycles TC A4	0 Fails >=77 parts	0 / 90	Precondition Samples to MSL 1, then stress Pass Device Test at 25C & 125C
			Ball Shear WBS C1	> 15gm, 3pcs		
			Bond Pull WBP C2	> 7 gm, 3 pcs	0 / 12	
		HAST 130°C 85%RH no bias Hirayama HASTEST PC-422 R8	96hr UHST A3	0 Fails >=77 parts	0 / 82	Precondition Samples to MSL 1, then Stress Pass Device Test at 25C & 125C
		HAST 130°C 85%RH 5.0V bias Hirayama HASTEST PC-422 R8 Delamination Inspection JA113/J-STD-020 Hitachi FS200 (MTHAI)	96hr HAST A4	0 Fails >=77 parts	0 / 90	Precondition Samples to MSL 1, then Stress Pass Device Test at 25C & 125C
			Ball Shear WBS C1	> 15gm, 3pcs		
			Bond Pull WBP C2	> 7 gm, 3 pcs	0 / 12	

**Package Qualification Result**

Test Conditions	Sample per lot	# Lots	Fail Criteria	Comment
Post Stress Cross Sections	1 pc per lot	3	No Delam, Cracks, or Corrosion	PASS
Wire Bond Ball Shear Test After 1x and 2x TC and bHAST Stress AEC-Q100-001	2 pc after 2x stress	3	> 15gram	PASS
Wire Bond Pull Test After 1x and 2x TC and bHAST Stress AEC-Q100-001	2 pc after 2x stress	3	> 7gram	PASS
8 Hour Steam Aging test followed by Solder Dip in SAC Solder (245C) Lead Free Solderability	27 pc	1	> 95% Coverage	PASS
8 Hour Steam Aging test followed by Solder Dip in SnPb Solder (215C) Backwards Solderability	27 pc	1	> 95% Coverage	PASS
Physical Dimensions per JESD22-B100 or JESD22-B108	10 pc	3	Meet SOIC Size specifications	Three production Samples inspected, All Pass



Affected Catalog Part Numbers (CPN)

AT34C04-SS5M-B  
AT34C04-SS5M-T  
AT93C86A-10SU-1.8  
AT93C86A-10SU-1.8-T  
AT93C86A-10SU-2.7  
AT93C86A-10SU-2.7-T  
AT24C02BN-SH-T  
AT24C02BN-SH-T-923  
AT24C64BN-10SU-2.7  
AT24C64BN-10SU-1.8  
AT24C64BN-10SU-1.8-T  
AT24C64BN-10SU-2.7-T  
AT93C46DN-SH-B  
AT93C46EN-SH-B  
AT93C46DN-SH-T  
AT93C46EN-SH-T  
AT93C46DN-SH-T-989  
AT93C46DN-SH-T-537  
AT24C04BN-SH-T-923  
AT24HC04BN-SH-B  
AT24HC04BN-SH-T  
AT24C1024BN-SH-T  
AT24MAC402-SSHM-B  
AT24MAC602-SSHM-B  
AT34C02D-SSHM-B  
AT24MAC402-SSHM-T  
AT24MAC602-SSHM-T  
AT34C02D-SSHM-T  
AT34C02D-SSHMHL-T  
AT24C04C-SSHM-B  
AT24CS04-SSHM-B  
AT24C04C-SSHM-T  
AT24CS04-SSHM-T  
AT24C512C-SSHD-B  
AT24C512C-SSHM-B  
AT24C512C-SSHM-T-989  
AT24C512C-SSHD-T  
AT24C512C-SSHM-T  
AT24C512C-SSHMEU-T  
AT24C512C-SSHMGT-T  
AT24C512C-SSHDHB-T  
AT24C512C-SSMHMB-T  
AT24C08C-SSHM-B  
AT24CS08-SSHM-B  
AT24C08C-SSHM-T  
AT24CS08-SSHM-T

AT24C01C-SSHM-B  
AT24CS01-SSHM-B  
AT24C01C-SSHM-T  
AT24CS01-SSHM-T  
AT24CS02-SSHM-B  
AT24C02C-SSHM-B  
AT24CS02-SSHM-T  
AT24C02C-SSHM-T  
AT24C02C-SSHM-T-441  
AT24C02C-SSHM-T-537  
AT24HC02C-SSHM-B  
AT24HC02C-SSHM-T  
AT24C256C-SSHL-B  
AT24C256C-SSHL-B-923  
AT24C256C-SSHL-T  
AT24C256C-SSHLEU-T  
AT24C256C-SSHLGT-T  
AT24C256C-SSHL-T-989  
AT24C256C-SSHL-T-537  
AT24C16C-SSHM-B  
AT24CS16-SSHM-B  
AT24C16C-SSHM-T  
AT24C16C-SSHMGT-T  
AT24CS16-SSHM-T  
AT24C64D-SSHM-B  
AT24CS64-SSHM-B  
AT24C64D-SSHM-T  
AT24C64D-SSHMGT-T  
AT24CS64-SSHM-T  
AT24CM01-SSHM-B  
AT24CM01-SSHD-B  
AT24CM01-SSHM-T  
AT24CM01-SSHD-T  
AT24CM01-SSHM-T-989  
AT24C128C-SSHM-B  
AT24C128C-SSHM-T  
AT24C128C-SSHMEU-T  
AT24C128C-SSHMGT-T  
AT24C128C-SSHM-T-989  
AT24C128C-SSHMGT-T  
AT24C32D-SSHM-B  
AT24CS32-SSHM-B  
AT24C32D-SSHMEN-T  
AT24C32D-SSHM-T  
AT24C32D-SSHMGT-T  
AT24CS32-SSHM-T  
AT24C32D-SSHMFD-T  
AT24C32D-SSHMFA-T  
AT24CM02-SSHM-B

AT24CM02-SSHD-B  
AT24CM02-SSHM-T  
AT24CM02-SSHD-T  
AT93C56B-SSHM-B  
AT93C66B-SSHM-B  
AT93C56B-SSHM-T  
AT93C66B-SSHM-T  
AT24C01D-SSHM-B  
AT24C02D-SSHM-B  
AT24C01D-SSHM-T  
AT24C02D-SSHM-T  
AT24C04D-SSHM-B  
AT24C04D-SSHM-T  
AT24C08D-SSHM-B  
AT24C08D-SSHM-T  
AT24C16D-SSHM-B  
AT24C16D-SSHM-T  
AT24C32E-SSHM-B  
AT24C32E-SSHM-T