



Product Change Notification / KSRA-30TQUS060

Date:

05-Oct-2020

Product Category:

32-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3519 Final Notice: Qualification of MTAI as an additional assembly site for selected Atmel products available in 32L TQFP (7x7x1mm) package using gold (Au) bond wire

Affected CPNs:

[KSRA-30TQUS060_Affected_CPN_10052020.pdf](#)
[KSRA-30TQUS060_Affected_CPN_10052020.csv](#)

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 MTAI as an additional assembly site for selected Atmel products available in 32L TQFP (7x7x1mm) package using gold (Au) bond wire

Pre Change:

Assembled in ASCL assembly site using palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900 die attach, and C194 lead frame material

Post Change:

Assembled in ASCL assembly site using palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900 die attach,

and C194 lead frame material

Assembled in MTAI assembly site using gold (Au) bond wire,3280 die attach, and C7025 lead frame material

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Group Chung-Li / ASCL	ASE Group Chung-Li / ASCL	Microchip Technology Thailand (HQ) / MTAI
Wire material	CuPdAu	CuPdAu	Au
Die attach material	EN-4900	EN-4900	3280
Molding compound material	G700	G700	G700
Lead frame material	C194	C194	C7025

Impacts to Data Sheet: None

Change Impact:None

Reason for Change:To improve on-time delivery performance by qualifying MTAI as an additional assembly site.

Change Implementation Status:In Progress

Estimated First Ship Date:December 26, 2018 (date code: 1852)

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

Time Table Summary:

	September 2018					->	November 2018					December 2018			
	3 5	3 6	3 7	3 8	3 9		44	45	46	47	48	49	50	51	52
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:September 10, 2018: Issued initial notification.

November 26, 2018: Issued final notification. Attached the qualification report. Revised the affected parts list. Provided estimated first ship date on December 26, 2018.

October 5, 2020: Re-issued final notification. Revised the affected parts list to only include catalog part numbers based on the scope.

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

Attachments:

[PCN_KSRA-30TQUS060_Qual_Report.pdf](#)

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

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Affected Catalog Part Numbers (CPN)

ATSAMD21E17D-AF
ATSAMD21E17D-AFT
ATSAMD21E17D-AU
ATSAMD21E17D-AUT
ATSAMD21E17L-AF
ATSAMD21E17L-AFT
ATSAMDA1E14B-ABT
ATSAMDA1E15B-ABT
ATSAMDA1E16B-ABT
ATSAML10E14A-AF
ATSAML10E14A-AFT
ATSAML10E14A-AU
ATSAML10E14A-AUT
ATSAML10E15A-AF
ATSAML10E15A-AFT
ATSAML10E15A-AU
ATSAML10E15A-AUT
ATSAML10E16A-AF
ATSAML10E16A-AFT
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ATSAML11E15A-AUT
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ATSAML11E16A-AUT
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ATSAMC20E15A-AUT
ATSAMC20E16A-ANT
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ATSAMC21E16A-AUT
ATSAMC21E17A-ANT

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ATSAMD20E14B-ANT
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ATSAMD20E14B-AUT
ATSAMD20E15B-AN
ATSAMD20E15B-ANT
ATSAMD20E15B-AU
ATSAMD20E15B-AUT
ATSAMD20E16B-AN
ATSAMD20E16B-ANT
ATSAMD20E16B-AU
ATSAMD20E16B-AUT
ATSAMD21E17D-AZ
ATSAMD21E17D-AZT
ATSAMDA1E15A-ABT
ATSAMDA1E15B-ABTVAO
ATSAMDA1E16A-ABT
ATSAMDA1E16B-ABTVAO



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QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: KSRA-30TQUS060

Date:

October 22, 2018

Qualification of MTAI as an additional assembly site for selected Atmel products available in 32L TQFP (7x7x1mm) package using gold (Au) bond wire



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Package Qualification Report

Purpose: Qualification of MTAI as an additional assembly site for selected Atmel products available in 32L TQFP (7x7x1mm) package using gold (Au) bond wire.

CCB Number: 3519

<u>Misc.</u>	Assembly site	MTAI
	BD Number	BDM-001914 rev. A
	MP Code (MPC)	661P2TT5XC02
	Part Number (CPN)	ATSAMC21E18A-AUT
<u>Lead-Frame</u>	Paddle size	197x197 mils
	Material	C7025
	Surface	Ag spot plated
	Treatment	Roughening
	Process	Stamped
	Lead-lock	No
	Part Number	TBD
	Lead Plating	Matte Tin
<u>Bond Wire</u>	Material	Au
<u>Die Attach</u>	Part Number	3280
	Conductive	Yes
<u>MC</u>	Part Number	G700HA
<u>PKG</u>	PKG Type	TQFP
	Pin/Ball Count	32
	PKG width/size	7x7
<u>Die</u>	Die Thickness	11 mils
	Die Size	134.3 x 123.5 mils
	MSL	MSL1/260



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Package Qualification Report

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI192202117.000	U08D91992207.100	18358GV
MTAI192203328.000	U08D91992207.100	1835B79
MTAI192202118.000	U08D91992207.100	18358GW

Result

Pass

Fail

SAMC21 661P2 in TQFP32 Singulated Package using 0.8 Au wire from MTAI assembly pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package is qualified Moisture/Reflow Sensitivity Classification Level 1 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
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 265°C max System: Mancorp CR.5000F (IPC/JEDEC J-STD-020E)	IPC/JEDE	45 units per lot	Lot 1 0/45	Pass	
				Lot 2 0/45	Pass	
				Lot 3 0/45	Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C System: Magnum Bake 150°C, 24 hrs System: HERAEUS 85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 265°C max System: Mancorp CR.5000F Electrical Test :+25°C System: Magnum	JESD22-A113	300 units per lot	Lot 1 0/300	Pass	Good Devices
				Lot 2 0/297	Pass	
				Lot 3 0/296	Pass	
Temp Cycle	Stress Condition: (Standard) -65°C to +150°C, 500 Cycles System : Votsch VTS ² 7012	JESD22-A104	88 units per lot	Lot 1 0/88	Pass	Parts had been pre-conditioned at 260°C
				Lot 2 0/88	Pass	
	Electrical Test: +25°C, 125°C System: Magnum					
HAST	Stress Condition: (Standard) + 130°C, 85%RH, 96 hrs. Bias Voltage: 5.5 Volts System: HIRAYAMA HATEST PC-422R8	JESD22-A110	84 per lot	Lot 1 0/84	Pass	Parts had been pre-conditioned at 260°C
				Lot 2 0/84	Pass	
				Lot 3 0/84	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED HAST	Stress Condition: (Standard) + 110°C, 85%RH, 264 hrs. System: HIRAYAMA HASTEST PC-422R8 Electrical Test: +25°C System: Magnum	JESD22-A110	80 units per lot	Lot 1 0/80	Pass	Parts had been pre-conditioned at 260°C
				Lot 2 0/80	Pass	
				Lot 3 0/80	Pass	
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: HERAEUS	JESD22-A103	90 units per lot	Lot 1 0/90	Pass	80 units per lot
				Lot 2 0/90	Pass	
				Lot 3 0/90	Pass	
Solderability Temp 245°C	Bake: Temp 155°C,4Hrs System: Oven Solder Bath: Temp.245°C Solder material: SAC305 Visual Inspection: External Visual Inspection	JESD22B-102E	15 from 1 lot	0/15	Pass	