Product Change Notification - LIAL-19IVLH492

Date:
30 Sep 2019
Product Category:
32-bit Microcontrollers
Affected CPNs:

Notification subject:
CCB 3655 Final Notice: Qualification of MMT as an additional assembly site for selected Atmel products of 58.85K and 58.8K wafer technologies available in 48L VQFN (7x7x0.9mm) package.
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 MMT as an additional assembly site for selected Atmel products of 58.85K and 58.8K wafer technologies available in 48L VQFN (7x7x0.9mm) package.

Pre Change:
Assembled at ASE using EN-4900F die attach material.

Post Change:
Assembled at ASE using EN-4900F die attach material or assembled at MMT using 3280 die attach material

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Inc. (ASE)	ASE Inc. (ASE)	Microchip Technology Thailand (Branch) (MMT)
Wire material	Au	Au	Au
Die attach material	EN-4900F	EN-4900F	3280
Molding compound material	G700	G700	G700
Lead frame material	C194	C194	C194

MSL level	MSL 3	MSL 3	MSL 1

Impacts to Data Sheet:
Yes. POD (package outline drawing) change. See the changes below:

	Pre Change			Post Change		
Dimension Limit (in mm)	Min	Nor	Max	Min	Nor	Max
Number of terminals		48			48	
Overall Height	0.8	0.85	0.9	0.8	0.9	1
Standoff	0	0.02	0.05	0	-	0.05
Terminal Thickness		0.20 REF			0.20 REF	
Overall Length		7.00 BSC			7.00 BSC	
Exposed Pad Length	5.5	5.6	5.7	5.5	5.6	5.7
Overall Width		7.00 BSC			7.00 BSC	
Exposed Pad Width	5.5	5.6	5.7	5.5	5.6	5.7
Terminal Width	0.17	0.25	0.3	0.2	0.25	0.3
Terminal Length	0.3	0.4	0.5	0.3	0.4	0.5
Pitch		0.50 BCS			0.50 BCS	

Note: These POD changes are within JEDEC limit so no significant impact other than a documentation change in the spec and/or datasheet.

Change Impact
None

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

Change Implementation Status:
In Progress

Estimated First Ship Date:
October 30, 2019 (date code: 1944)

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

Time Table Summary:

	December 2018				-->	September 2019					October 2019			
Workweek	49	50	51	52		36	37	38	39	40	41	42	43	44
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:
December 27, 2018: Issued initial notification.
September 30, 2019: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on October 30, 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_LIAL-19IVLH492_QUAL REPORT.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

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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)

AT91SAM7S32B-MU
AT91SAM7S32B-MU-999
ATSAM3N00AA-MU
ATSAM3N00AA-MUR
ATSAM3N0AA-MU
ATSAM3N0AA-MUR
ATSAM3N1AB-MU
ATSAM3N1AB-MUR
ATSAM3S1AB-MU
ATSAM3S1AB-MUR
ATSAM3S2AA-MU
ATSAM3S2AA-MUR
ATSAM3S4AA-MU
ATSAM3S4AA-MUR

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: LIAL-19IVLH492

Date
September 13, 2019

Qualification of MMT as an additional assembly site for selected Atmel products of 58.85K and 58.8K wafer technologies available in 48L VQFN (7x7x0.9mm) package.

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Package Qualification Report

Purpose: Qualification of MMT as an additional assembly site for selected Atmel products of 58.85K and 58.8K wafer technologies available in 48L VQFN (7x7x0.9mm) package.

Miscellaneous	Assembly site	MMT
	BD Number	BDM-001983/A
	MP Code (MPC)	58Z25TSMBC02
	Part Number (CPN)	ATSAM3S2AA-MUR
	CCB No.	3655
	Quad id and rev	QTP3774 Rev A
Lead-Frame	Paddle size	228x228 mils
	Material	C194
	DAP Surface Prep	Selective Ag
	Treatment	BOT
	Process	Etched
	Lead-lock	No
	Part Number	10104810
	Lead Plating	Matte tin
	Strip Size	70x250
	Strip Density	240
Bond Wire	Material	Au
Die Attach	Part Number	3280
	Conductive	Yes
Mold Compound	Part Number	G700LTD
PKG	PKG Type	VQFN
	Pin/Ball Count	48L
	PKG width/size	7x7x0.9mm
Die	Die Thickness	11 mils
	Die Size	176.65x166.18 mils
	Fab Process (site)	UMC/58.85K
MSL		MSL-1@260C

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Package Qualification Report

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
194501806000MMT	U8CD919280632.200#15	1906252
194501807000MMT	U8CD919280632.200#16	190724W
194600347000MMT	U8CD919280632.200#15	1907251

Result ☑ Pass ☐ Fail ☐ _____

Atmel MCT32 “58Z25” Ground bonding products on 48L VQFN 7x7 (SMB) Au at MMT pass reliability test per microchip qualification rules. This package was qualified the Moisture/ Reflow Sensitivity Classification Level 1 at 260°C reflow temperature. Reliability assessment has been made as authorized by QCI-39000-002 and J-STD-020E standards.

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)	JEDEC J-STD-020E	45 units per lot	Lot 1 0/45 Lot 2 0/45 Lot 3 0/45	Pass Pass Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test :**25°C Done in ASE 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 :** 25C Done in ASE	JESD22-A113 JEDEC J-STD-020E	231 units per lot	Lot 1 0/231 Lot 2 0/231 Lot 3 0/231	Pass Pass Pass	Good Devices

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED HAST	**Stress Condition:** (Standard) + 130°C, 85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C Done in ASE	JESD22-A118	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
HAST	**Stress Condition:** (Standard) +130°C, 85%RH, 96 hrs. VOLTS=5.5V System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C Done in ASE	JESD22-A110	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass	Parts had been pre-conditioned at 260°C

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Temp Cycle	**Stress Condition:** (Standard) -65°C to +150°C, 500 Cycles System: Votsch VTS^{2}7012 **Electrical Test:** 25°C Done in ASE	JESD22-A104	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
	Bond Strength: Wire Pull (> 1.75 grams) Bond *Shear (>12.6 grams)* System: Dage Cpk > 1.67		5 units per lot	Lot 1, 0/5 Lot 2, 0/5 Lot 3, 0/5	Pass Pass Pass	
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 500 hrs System: HERAEUS **Electrical Test:** 25°C Done in ASE	JESD22-A103	45 units per lot	Lot 1 0/45 Lot 2 0/45 Lot 3 0/45	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Bond Strength, 0 Hour	**System:** Dage Wire Pull (> 1.75 grams) Bond *Shear (>12.6 grams)* CpK > 1.67		5 units per lot	Lot 1 0/5 Lot 2 0/5 Lot 3 0/5	Pass Pass Pass	
PHYSICAL DIMENSIONS	Physical Dimension, 30 units from 3 lots	JESD22 -B100/B108	10 units per lot	Lot 1 0/10 Lot 2 0/10 Lot 3 0/10	Pass Pass Pass	