



Product Change Notification / LIAL-19GWRY786

Date:

15-Jun-2023

Product Category:

32-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4846 Final Notice: Qualification of ATP7 as an additional assembly site for selected ATSAMC20xx, ATSAMC21xx, ATSAMD20xx, ATSAMD21xx and ATSAML21xx device families available in 64L VQFN (9x9x1mm) package.

Affected CPNs:

[LIAL-19GWRY786_Affected_CPN_06152023.pdf](#)

[LIAL-19GWRY786_Affected_CPN_06152023.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 ATP7 as an additional assembly site for selected ATSAMC20xx, ATSAMC21xx, ATSAMD20xx, ATSAMD21xx and ATSAML21xx device families available in 64L VQFN (9x9x1mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change
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Method to Identify Change:Traceability code

Qualification Report:Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History:

October 7, 2021: Issued initial notification.

June 15, 2023: Issued final notification. Attached the Qualification Report. Revised the affected parts list. Provided estimated first ship date to be on June 26, 2023.

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

Attachments:

[PCN_LIAL-19GWRY786_Qual Report.pdf](#)

[PCN_LIAL-19GWRY786_Pre and Post Change Summary.pdf](#)

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

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: LIAL-19GWRY786

Date:
May 19, 2023

**Qualification of ATP7 as an additional assembly site for
selected ATSAMC20xx, ATSAMC21xx, ATSAMD20xx,
ATSAMD21xx and ATSAML21xx device families
available in 64L VQFN (9x9x1mm) package.**



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of ATP7 as an additional assembly site for selected ATSAMC20xx, ATSAMC21xx, ATSAMD20xx, ATSAMD21xx and ATSAML21xx device families available in 64L VQFN (9x9x1mm) package.
CCB	4846
CN	E000081875
QUAL ID	R2200351 Rev. A
MP CODE	661A4TTMBC06
Part No.	ATSAML21J18B-MUT
Bonding No.	BD-000222 Rev.01
 <u>Package</u>	
Type	64L VQFN
Package size	9x9x1 mm
 <u>Lead Frame</u>	
Paddle size Material	197X197mils
Surface	C19
Process	Double Ring Plating
Lead Lock	Etched
Part Number	No
 <u>Material</u>	
Epoxy	CRM1085A
Wire	CuPdAu
Mold Compound	G631BQF
Plating Composition	Matte Sn



MICROCHIP **PACKAGE QUALIFICATION REPORT**

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
ATP7223000001.000	U08D922249530.100	214244S
ATP7223000002.000	U08D922249530.100	214245P
ATP7223000003.000	U08D922249530.100	214245S

Result

☒

Pass

☐

Fail

☐

64L VQFN (9x9x1 mm) assembled by ATP7 pass reliability test per QCI-39000.
This package was qualified the 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
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 3)	Electrical Test: +25°C System: M1_SV_1024	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs. System: CHINEE	JIP/IPC/JEDEC J-STD-020E		0/693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH			0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +25°C System: M1_SV_1024		693(0)	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	Stress Condition: -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H Electrical Test: +25°C System: M1_SV_1024	JESD22-A104	231(0)	0/231	Pass	Parts had been pre-conditioned at 260°C
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H Electrical Test: +25°C System: M1_SV_1024		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.50 grams)	Mil. Std. 883-2011	15(0)	0/15	Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X Electrical Test: +25°C System: M1_SV_1024	JESD22-A118	231(0)	0/231	Pass	Parts had been pre-conditioned at 260°C
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X Electrical Test: + 25°C System: M1_SV_1024		231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 3.3 Volts System: HIRAYAMA HASTEST PC-422R8 Electrical Test: +25°C System: HD-88	JESD22-A110	210(0)	0/210	Pass	Parts had been pre-conditioned at 260°C
	Stress Condition: +130°C/85%RH, 192 hrs. Bias Volt: 3.3 Volts System: HIRAYAMA HASTEST PC-422R8 Electrical Test: +25°C System: HD-197		210(0)	0/210	Pass	70 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs. System: SHEL LAB	JESD22- A103		0/135		45 units / lot
	Electrical Test: +25°C System: M1_SV_1024		135(0)	0/135	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C, 8Hrs System: SAS-3000 Solder Dipping: Solder Temp. 245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERS A RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22(0)	0/22		
				0/22		
				0/22	Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22- B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>4.00 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>16.00 grams)	CDF-AEC- Q100-001	30(0) bonds	0/30	Pass	

Affected Catalog Part Numbers (CPN)

ATSAMC20J15A-MNT
ATSAMC20J15A-MUT
ATSAMC20J16A-MNT
ATSAMC20J16A-MUT
ATSAMC20J17A-MNT
ATSAMC20J17A-MUT
ATSAMC20J18A-MNT
ATSAMC20J18A-MUT
ATSAMC21J15A-MNT
ATSAMC21J15A-MUT
ATSAMC21J16A-MNT
ATSAMC21J16A-MUT
ATSAMC21J17A-MNT
ATSAMC21J17A-MUT
ATSAMC21J17A-MUTN02
ATSAMC21J18A-MNT
ATSAMC21J18A-MUT
ATSAMC21J18A-MUT64
ATSAMC21J18A-MUTN01
ATSAMD20J14A-MN
ATSAMD20J14A-MNT
ATSAMD20J14A-MU
ATSAMD20J14A-MUA2
ATSAMD20J14A-MUT
ATSAMD20J14A-MUTA2
ATSAMD20J14B-MN
ATSAMD20J14B-MNT
ATSAMD20J14B-MU
ATSAMD20J14B-MUT
ATSAMD20J15A-MN
ATSAMD20J15A-MNT
ATSAMD20J15A-MU
ATSAMD20J15A-MUA2
ATSAMD20J15A-MUT
ATSAMD20J15A-MUTA2
ATSAMD20J15B-MN
ATSAMD20J15B-MNT
ATSAMD20J15B-MU
ATSAMD20J15B-MUT
ATSAMD20J16A-MN
ATSAMD20J16A-MNT
ATSAMD20J16A-MU
ATSAMD20J16A-MUA2
ATSAMD20J16A-MUT
ATSAMD20J16A-MUTA2
ATSAMD20J16B-MN

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ATSAMD20J16B-MNT

ATSAMD20J16B-MU

ATSAMD20J16B-MUB7

ATSAMD20J16B-MUB8

ATSAMD20J16B-MUT

ATSAMD20J17A-MN

ATSAMD20J17A-MNT

ATSAMD20J17A-MU

ATSAMD20J17A-MUA2

ATSAMD20J17A-MUN01

ATSAMD20J17A-MUT

ATSAMD20J17A-MUTA2

ATSAMD20J18A-MN

ATSAMD20J18A-MNT

ATSAMD20J18A-MU

ATSAMD20J18A-MUA2

ATSAMD20J18A-MUT

ATSAMD20J18A-MUTA2

ATSAMD21J17A-MF

ATSAMD21J17A-MFT

ATSAMD21J17A-MU

ATSAMD21J17A-MUA1

ATSAMD21J17A-MUT

ATSAMD21J17A-MUTA1

ATSAMD21J18A-MF

ATSAMD21J18A-MFT

ATSAMD21J18A-MU

ATSAMD21J18A-MUA1

ATSAMD21J18A-MU-SLL

ATSAMD21J18A-MUT

ATSAMD21J18A-MUTA1

ATSAML21J16B-MNT

ATSAML21J16B-MUT

ATSAML21J17B-MNT

ATSAML21J17B-MUT

ATSAML21J17B-MUT-SLL

ATSAML21J18B-MNT

ATSAML21J18B-MU

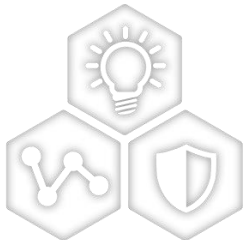
ATSAML21J18B-MUT

ATSAML21J18B-MUT-SLL

CCB 4846
Pre and Post Change Summary
PCN#: LIAL-19GWRY786



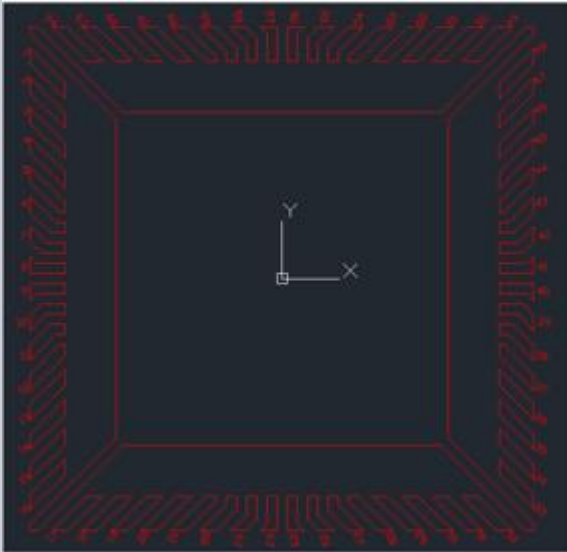
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SMART | CONNECTED | SECURE

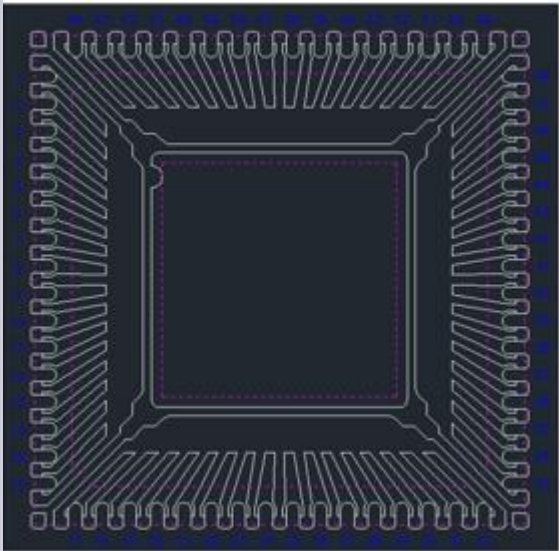
Lead frame comparison

ASE



Lead frame	Paddle size	193 x 193 mils
	DAP Surface Prep	Ring Plating

ATP7



Lead frame	Paddle size	197 x 197 mils
	DAP Surface Prep	Double Ring Plating