



Product Change Notification / MFOL-02RMEZ001

Date:

26-Mar-2024

Product Category:

Current And Power Measurement ICs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5351 Final Notice: Qualification of MMT as an additional assembly site for PAC1710-1-AIA-TR, PAC1720-1-AIA-TR, and PAC1921-1-AIA-TR catalog part numbers (CPN) available in 10L VDFN (3x3x0.9mm) package.

Affected CPNs:

[MFOL-02RMEZ001_Affected_CPN_03262024.pdf](#)

[MFOL-02RMEZ001_Affected_CPN_03262024.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 MMT as an additional assembly site for PAC1710-1-AIA-TR, PAC1720-1-AIA-TR, and PAC1921-1-AIA-TR catalog part numbers (CPN) available in 10L VDFN (3x3x0.9mm) package.

Pre and Post Change Summary:

		Pre Change		Post Change		
Assembly Site		HANA Microelectronics -China (HANC)	Amkor Technology Philippines (P3/P4), INC. (ATP7)	HANA Microelectronics -China (HANC)	Amkor Technology Philippines (P3/P4), INC. (ATP7)	Microchip Technology Thailand (Branch) (MMT)
Wire Material		Au	Au	Au	Au	Au
Die Attach Material		2200D	AMK06	2200D	AMK06	8600
Molding Compound Material		CEL9220HF13H	G700Y	CEL9220HF13H	G700Y	G700LTD
Lead-F rame	Material	C194	C194	C194	C194	A194
	Lead-loc k	No	No	No	No	Yes
	Paddle Size	70 x 98 mils	71 x 98 mils	70 x 98 mils	71 x 98 mils	71 x 98 mils
DAP Surface Prep		NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu

Note: * C194, A194 or CDA194 Lead frame material are the same, it is just a MCHP internal labelling difference below the pre and post summary table.

Impacts to Data Sheet:Yes. Package Outline Drawing (POD).

Units: mm		HANC			ATP7			MMT		
		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max
Number of Pins	N	10			10			10		
Pitch	e	0.50 BSC			0.50 BSC			0.50 BSC		
Overall Height	A	0.85	0.9	0.95	0.08	0.85	0.9	0.8	0.9	1
Stand off	A1	-	-	-	0	0.02	0.05	0	0.02	0.05
Contact Thickness	A3	0.2	0.203	0.211	0.20 REF			0.20 REF		
Overall Length	D	3.00 BSC			3.00 BSC			3.00 BSC		
Exposed Pad Length	D2	2.2	2.45	2.7	2.2	2.3	2.4	2.2	2.3	2.4
Overall Width	E	3.00 BSC			3.00 BSC			3.00 BSC		
Exposed pad width	E2	1.4	1.575	1.75	1.5	1.6	1.7	1.5	1.6	1.7
Contact Width	b	0.18	0.23	0.3	0.18	0.25	0.3	0.2	0.25	0.3
Contact Length	L	0.35	0.4	0.45	0.35	0.4	0.45	0.35	0.4	0.45

Terminate-to-Exposed pad	K				0.2			0.2		
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Change Impact:None

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

Change Implementation Status:In Progress

Estimated First Ship Date:April 24, 2024 (date code: 2417)

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

Time Table Summary:

	November 2022					>	March 2024					April 2024				
Workweek	4 5	4 6	4 7	4 8	4 9		09	10	11	12	13	14	15	16	17	18
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:November 7, 2022: Issued initial notification.
March 26, 2024: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on April 24, 2024.

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

Attachments:

PCN_MFOL-02RMEZ001_Pre and Post change summary.pdf
PCN_MFOL-02RMEZ001_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)

PAC1921-1-AIA-TR

PAC1710-1-AIA-TR

PAC1720-1-AIA-TR



QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN ID#: MFOL-02RMEZ001

Date:
March 1, 2024

**Qualification of MMT as an additional assembly site for
PAC1710-1-AIA-TR, PAC1720-1-AIA-TR, and PAC1921-1-AIATR catalog
part numbers (CPN) available in 10L VDFN
(3x3x0.9mm) package.**



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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for PAC1710-1-AIA-TR, PAC1720-1-AIA-TR, and PAC1921-1-AIATR catalog part numbers (CPN) available in 10L VDFN (3x3x0.9mm) package.
CN	E000153902
QUAL ID	R2300375 Rev. A
MP CODE	VA202Y9QXAC0
Part No.	PAC1921-1-AIA-TR
Bonding No.	BD-000914 Rev. 01
CCB No.	5351
<u>Package</u>	
Type	10L VDFN
Package size	3 x 3 x 0.9 mm
<u>Lead Frame</u>	
Paddle size	71 x 98 mils
Material	A194
Surface	NiPdAu Pre-Plated
Process	ETCHED
Lead Lock	Yes
Part Number	10101004
<u>Material</u>	
Epoxy	8600
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	NiPdAu



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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-234102114.000	TC08921287801.600	2302QRY
MMT-234102235.000	TC08921287801.600	2302B4G
MMT-234202133.000	TC08921287801.600	2303BSA

Result

☒ Pass ☐ Fail ☐ _____

10L VDFN (3x3x0.9 mm) assembled by MMT pass reliability test per QCI-39000.
This package was qualified the 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
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 1)	Electrical Test: +25°C System: EX_VI16	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs. System: CHINEE	JIP/IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C System: EX_VI16		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	JESD22-A104		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: EX_VI16		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.50 grams)		15(0)	0/15	Pass Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: EX_VI16		231(0)	0/231	Pass	77 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 Electrical Test: +25°C System: EX_VI16	JESD22- A103		0/45		45 units
			45(0)	0/45	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C, 1Hrs System: SAS-3000 Solder Dipping: Solder Temp. 245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA 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 (>2.50 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>10.00 grams)	CDF-AEC- Q100-001	30(0) bonds	0/30	Pass	

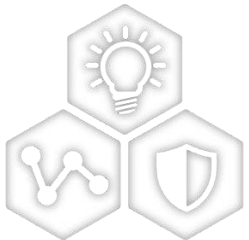
CCB 5351

Pre and Post Change Summary

PCN #: MFOL-02RMEZ001

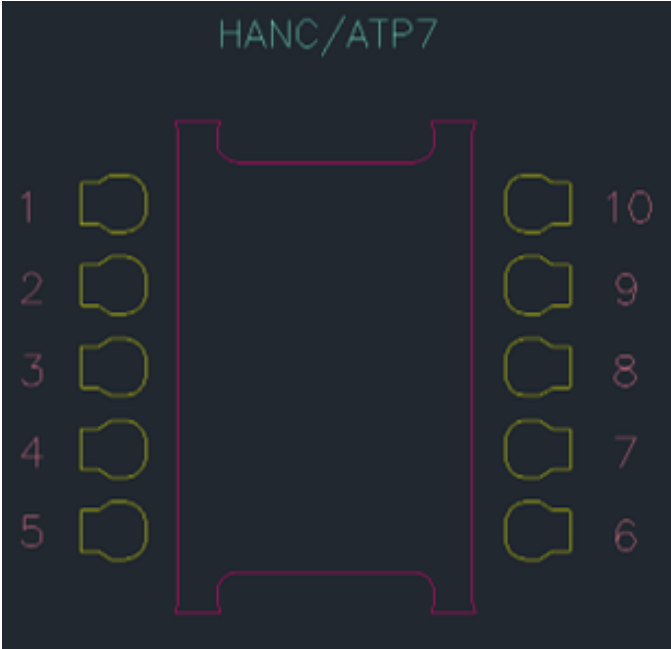
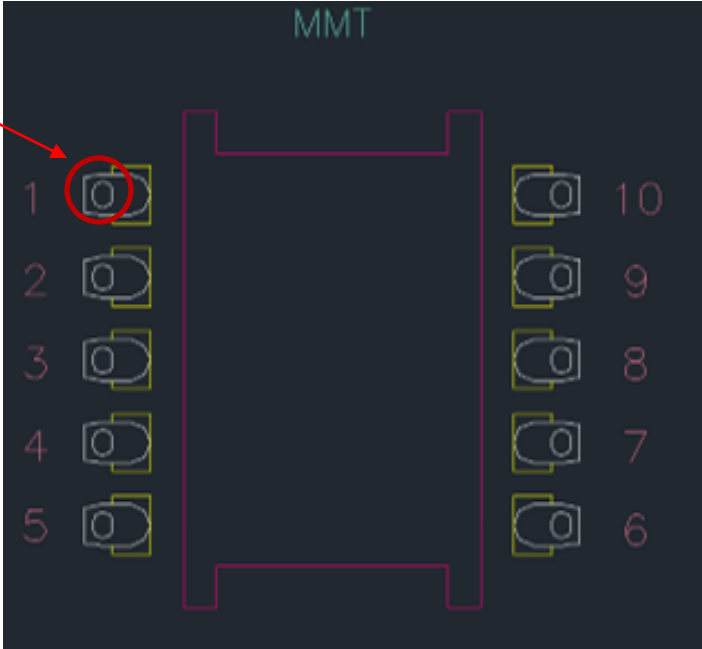


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LEADFRAME COMPARISON

HANC / ATP7	MMT								
 <p>Diagram of HANC/ATP7 leadframe showing pins 1-10 and a central body.</p>	<p>Lead-lock</p>  <p>Diagram of MMT leadframe showing pins 1-10, a central body, and a lead-lock hole at pin 1.</p>								
<table><tr><td>Lead-lock</td><td>No</td></tr><tr><td>Lead frame Material</td><td>C194</td></tr></table>	Lead-lock	No	Lead frame Material	C194	<table><tr><td>Lead-lock</td><td>Yes</td></tr><tr><td>Lead frame Material</td><td>A194</td></tr></table>	Lead-lock	Yes	Lead frame Material	A194
Lead-lock	No								
Lead frame Material	C194								
Lead-lock	Yes								
Lead frame Material	A194								

Note: * C194, A194 or CDA194 Lead frame material are the same, it is just a MCHP internal labelling difference.

Note: Mold compound materials fills the leadlock hole, which provides improved protection against moisture penetration along the edge of the leads (pins) of the package.