Product Change Notification / RMES-21CWWT073

Date:

06-Dec-2021

Product Category:

Ethernet Bridges, Ethernet PHYs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4629 Final Notice: Qualification of STA as an additional assembly site for LAN7500x, LAN8820x and LAN9730x device families available in 56L VQFN (8x8x0.9mm) package.

Affected CPNs:

RMES-21CWWT073_Affected_CPN_12062021.pdf
RMES-21CWWT073_Affected_CPN_12062021.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 STA as an additional assembly site for LAN7500x, LAN8820x and LAN9730x device families available in 56L VQFN (8x8x0.9mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Inc.	ASE Inc.	STATS Chippac Ltd.

	(ASE)	(ASE)	(STA)
Wire Material	PdCu	PdCu	CuPdAu
Die Attach Material	EN-4900F	EN-4900F	8290
Molding Compound Material	G631B	G631B	G700E
Lead-Frame Material	C194	C194	C194
Lead-Frame Paddle Size	240X240 mils	240X240 mils	236X236 mils
DAP Surface Prep	Double Ring	Double Ring	Double Ring

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying STA as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: October 31, 2021 (date code: 2145)

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

Time Table Summary:

	April 2021					**>**	**October 2021**						**December 2021**			
Workweek	14	15	16	17	18		40	41	42	43	44	45	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:
April 22, 2021: Issued initial notification.
October 01, 2021: Issued final notification. Provided estimated first ship date to be on October 31, 2021. Updated the estimated qualification completion date from August 2021 to December 2021. Updated the lead frame DAP surface prep of STA assembly site from Ring plating to double ring plating in the pre and post change summary table. Attached the lead frame drawing pre and post change summary.
December 6, 2021: Re-issued final notification. Updated the lead frame drawing pre and post change summary. Attached the qualification report and updated time table summary.

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

Attachments:

PCN_RMES-21CWWT073_Qual_Report.pdf
PCN_RMES-21CWWT073_Pre and Post Change_Summary.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)

LAN7500-ABZJ
LAN8820-ABZJ
LAN7500I-ABZJ
LAN8820I-ABZJ
LAN7500-ABZJ-TR
LAN8820-ABZJ-TR
LAN7500I-ABZJ-TR
LAN8820I-ABZJ-TR
LAN9730-ABZJ
LAN9730I-ABZJ
LAN9730-ABZJ-TR
LAN9730I-ABZJ-TR

CCB 4629
Pre and Post Change Summary
PCN#: RMES-21CWWT073

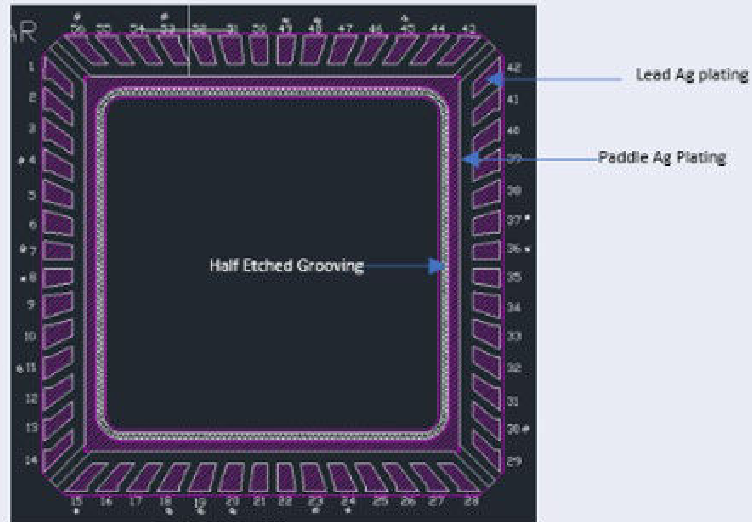
A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

Lead frame comparison

ASE

LF Definition – Double Ring Plating

*Plating on Lead finger and plating surrounding LF Paddle (Purple shaded area)

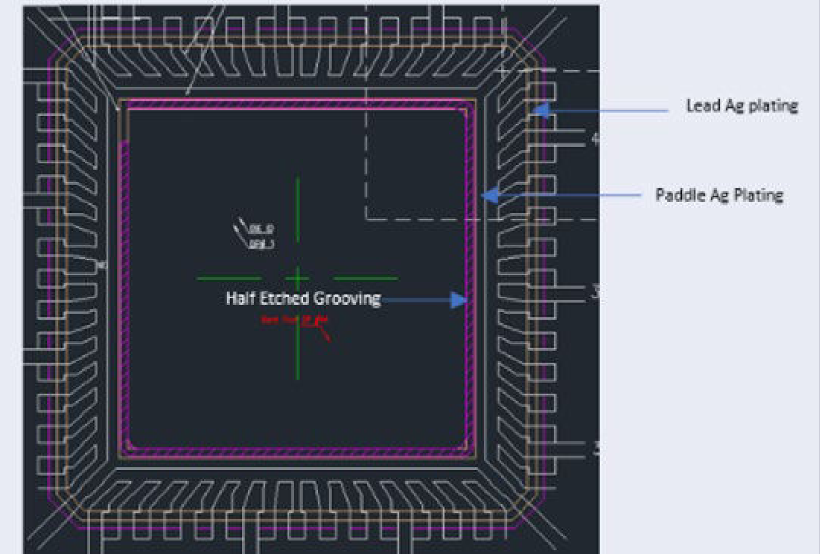


Lead frame Paddle size	240 x 240 mils

STA

LF Definition – Double Ring Plating

*Plating on Lead finger and plating surrounding LF Paddle (Yellow outline area)



Lead frame Paddle size	236 x 236 mils

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: RMES-21CWWT073

Date
November 17, 2021

Qualification of STA as an additional assembly site for LAN7500x, LAN8820x and LAN9730x device families available in 56L VQFN (8x8x0.9mm) package.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of STA as an additional assembly site for LAN7500x, LAN8820x and LAN9730x device families available in 56L VQFN (8x8x0.9mm) package.
CN	ES361350
QUAL ID	R2100818 Rev A
CCB No.	4629
MP CODE	XA1011RTXA0C
Part No.	LAN7500-ABZJ
Bonding No.	BDM-002968 Rev. A
Package	
Type	56L VQFN
Package size	8x8x0.9 mm
Lead Frame	
Paddle size	236 x 236 mils
Material	C194
Surface	Double Ring
Process	Etched
Lead Lock	No
Part Number	R002-3646X
Material	
Epoxy	8290
Wire	CuPdAu
Mold Compound	G700E
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
STA-221300002.000	TC14922029241.100	2125YGQ
STA-221300004.000	TC14922029241.100	2125YH2
STA-221300003.000	TC14922029241.100	2125YGY

Result [X] Pass [ ] Fail [ ] ____________________

56L VQFN (8x8x0.9 mm) assembled by STA 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
Precondition Prior Perform Reliability Tests (At MSL Level 3)	**Electrical Test:** +25°C and 100°C System: EX_ANALOG	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C and 100°C System: EX_ANALOG			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		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +100°C System: EX_ANALOG		231(0)	0/231	Pass	77 units / lot
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +100°C System: EX_ANALOG		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 3.00 grams)		15 (0)	0/15	Pass	
	Bond Shear (> 8.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: EX_ANALOG		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: EX_ANALOG		231(0)	0/231	Pass	

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 and 100°C System: EX_ANALOG	JESD22-A103	45(0)	45 0/45	Pass	45 units
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: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 22 0/22	Pass	
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 3.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (> 8.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	