Product Change Notification / NTDO-29TVUD658

Date:

23-Nov-2021

Product Category:

Ethernet Bridges, Ethernet Controllers, USB Hubs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4623 Final Notice: Qualification of STA as an additional assembly site for LAN9220, LAN9221, LAN9500 and USB2524 SMSC device families available in 56L VQFN (8x8x0.9mm) package

Affected CPNs:

NTDO-29TVUD658_Affected_CPN_11232021.pdf
NTDO-29TVUD658_Affected_CPN_11232021.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 LAN9220, LAN9221, LAN9500 and USB2524 SMSC device families available in 56L VQFN (8x8x0.9mm) package.

Pre and Post Change Summary:

	Pre Change		Post Change		
Assembly Site	ASE Inc. (ASE)		ASE Inc. (ASE)		STATS Chippac Ltd. (STA)
Wire material	PdCu	Au	PdCu	Au	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
	See attached pre and post change comparison		
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: July 8, 2021 (date code: 2128)

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

Time Table Summary:

	May 2021					-->	July 2021				
Workweek	19	20	21	22	23		27	28	29	30	31
Final PCN Issue Date		X									
Qual Report Availability		X									
Estimated First Ship 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:
May 12, 2021: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on July 08, 2021.**November 17, 2021:** Updated Ring Plating to Double Ring in Pre and Post Change Summary.
November 23, 2021: Updated attached PCN NTDO-29TVUD658_Pre and Post Change Comparison.

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

Attachments:

PCN NTDO-29TVUD658_Pre and PostChange Comparison.pdf
PCN_NTDO-29TVUD658_Qual_Report.pdf

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

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the PCN FAQ section.

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)

LAN9220-ABZJ
LAN9221-ABZJ
LAN9221I-ABZJ
USB2524-ABZJ
LAN9500-ABZJ-A00
LAN9500I-ABZJ
LAN9500-ABZJ
LAN9500I-ABZJ-TR

CCB 4623

Pre and Post Change Summary

PCN #NTDO-29TVUD658

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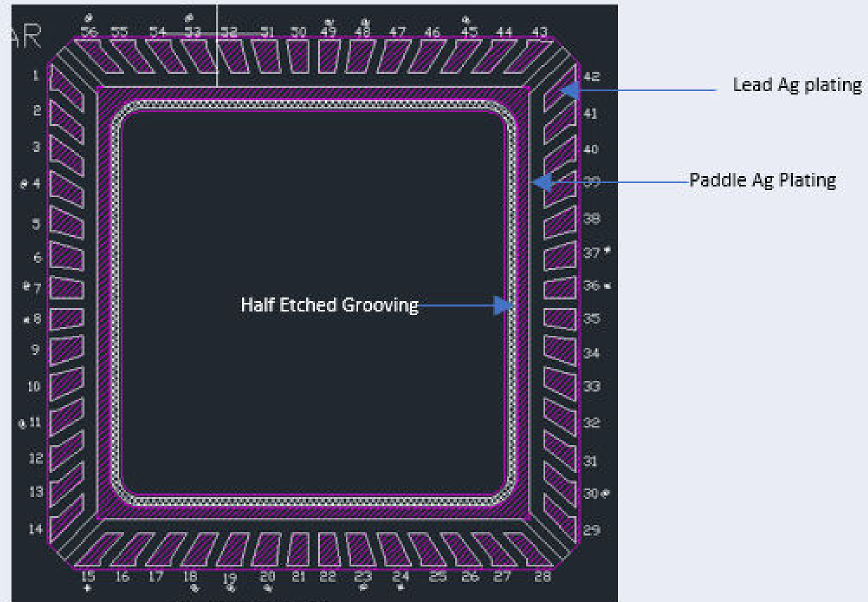
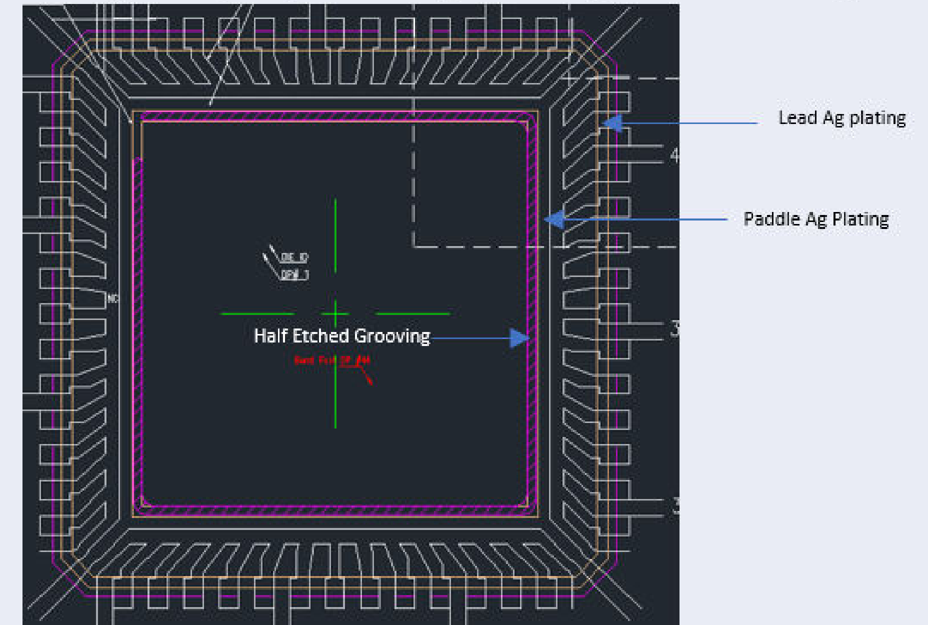
Lead frame Comparison

ASE	STA
LF Definition – Double Ring Plating *Plating on Lead finger and plating surrounding LF Paddle (Purple shaded area) 	LF Definition – Double Ring Plating *Plating on Lead finger and plating surrounding LF Paddle (Yellow outline area) 

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: NTDO-29TVUD658

Date:
December 27, 2011

Qualification of STA as an additional assembly site for selected products available in 64L VQFN (9x9x0.85 mm) package. The qualification of STA as additional assembly site for selected LAN922X, LAN9500 and USB2524 devices family available in 56L VQFN (8x8x0.9mm) package will qualify by similarity (QBS).

Purpose: Qualification of STA as an additional assembly site for selected products available in 64L VQFN (9x9x0.85 mm) package. The qualification of STA as additional assembly site for selected LAN922X, LAN9500 and USB2524 devices family available in 56L VQFN (8x8x0.9mm) package will qualify by similarity (QBS).

Misc.	Assembly site	STA
	CCB No.	4623
	Qual ID	QAR2010-076
Lead-Frame	Material	C194
	Lead Plating	Ag (Ring plating) / Etched
	Leadframe Size	4.9 x 4.9 mm
Bond Wire	Material	PdCu
Die Attach	Part Number	8290
MC	Part Number	G700E
PKG	PKG Type	VQFN
	Pin/Ball Count	64
	PKG width/size	9x9x0.85

Assembly Process Data

Process	Test Item	Criteria	Sample Size	Failure/ Tested Qty.	Remarks Pass/Fail
Wafer Saw	Topside Chipping Backside Chipping	50% max of damage the guard ring 125µm max	45 units/lot 45 units/lot	0/45 0/45	Pass Pass
Die attach	Epoxy Void Bond Line	10% max of die area 10-40µm	10 units/lot 10 units/lot	0/10 0/10	Pass Pass
Wirebond	Wirepull	3 gr. Min	20 wires/units 4 units	0/80	Pass
	Stitchpull	2.5 gr. Min	10 wires/units 5 units	0/50	Pass
	Ball Shear	8 gr min.	08 ball/units 5 units	0/40	Pass
	Loop Height	250 µm Max.	10 wires/units 2 units	0/20	Pass
	Cratering	0 defects	03 unit/lot All pads	0/3	Pass
	Au Intermetallic	60% min. Coverage	1 unit/lot 5 units	0/5	Pass
Mold	Wiresweep	10% max of longest wire	10 units/lot	0/10	Pass
Singulation	Package Dim	9+/-0.05mm 9+/-0.05mm	10 readings 10 readings	0/10 0/10	Pass Pass
Plating Thickness	Thickness	10-18µm	20 readings	0/20	Pass

SUMMARY RESULT OF RELIABILITY TEST

ITEM	CONDITION	BEFORE PRECONDITIONING		AFTER PRECONDITIONING	
		O/S TEST	SAT	O/S TEST	SAT
PRECONDITIONING	30^{0}C / 60% RH 192 HRS, Level 3 per Jedec	0/240	0/240	0/240	0/240
TEST ITEM (With Pre-Condition)	TEST CONDITION	TEST INTERVAL		VISUAL Inspection	O/S TEST
TEMPRATURE CYCLE TEST	JEDEC 22-A104 -65'C~150'C	1000/1500 CYC		0/60	0/60
HIGH TEMPERATURE STORGE TEST	JEDEC 22-A103 150'C	1000/1500 HRS		0/60	0/60
HAST TEST (NO BIAS)	JEDEC 22-A118 130'C/85%RH 33.5PSIG	100/150 HRS		0/60	0/60
TEMPERATURE HUMIDITY TEST (NO BIAS)	JEDEC 22-A101 85'C/85%RH	1000/1500 HRS		0/60	0/60

Test	Sample Size	Spec .	Pass/Fail
Physical dimensions	15	Plastic Pkg outlines - internal specs.	15/0
Solderability	15	PI-23 Matte-Sn Plating	15/0
Marking Inspection	1	AP-51	PASS
Packing Inspection	One Inner Box	AP-71	PASS