



Product Change Notification / MAAN-24NWLH863

Date:

09-Nov-2023

Product Category:

Depletion Mode MOSFETs, N-Channel Enhancement Mode MOSFETs, P-Channel Enhancement Mode MOSFETs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6432 Final Notice: Qualification of GTBF as an additional assembly site for selected DNxxxxN8, TNxxxxN8, TPxxxxN8, VNxxxxN8 and VPxxxxN8 device families available in 3L SOT-89 package.

Affected CPNs:

[MAAN-24NWLH863_Affected_CPN_11092023.pdf](#)

[MAAN-24NWLH863_Affected_CPN_11092023.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 GTBF as an additional assembly site for selected DNxxxxN8, TNxxxxN8, TPxxxxN8, VNxxxxN8 and VPxxxxN8 device families available in 3L SOT-89 package.

Pre and Post Change Summary:

	Pre Change	Post Change
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Assembly Site		Lingsen Precision Industries, LTD. (LPI)	Lingsen Precision Industries, LTD. (LPI)	Great Team Backend Foundry (Dong Guan) Ltd. (GTBF)
Wire Material		Au	Au	Au
Die Attach Material		8060T	8060T	CRM-1800
Molding Compound Material		G600	G600	CEL-9240HF10L8
Lead-Frame	Material	KFC	KFC	KFC/LY89
	Paddle Size	79x63mils	79x63mils	71x79mils
		See attached Pre and Post Change comparison		

Impacts to Data Sheet:None

Change Impact:None

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

Change Implementation Status:In Progress

Estimated First Ship Date:December 1, 2023 (date code: 2348)

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

Time Table Summary:

	July 2023					>	November 2023				December 2023				
Workweek	2 7	2 8	2 9	3 0	3 1		4 4	4 5	4 6	4 7	4 8	4 9	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: July 28, 2023 Issued initial notification.

November 9, 2023: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on December 1, 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_MAAN-24NWLH863_Pre_and_Post_Change_Summary.pdf](#)

[PCN_MAAN-24NWLH863_Qual_Report.pdf](#)

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

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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)

DN3545N8-G-D561
TN2510N8-G-D592
TN2540N8-L-G
TP2540N8-L-G
DN3525N8-G
DN2540N8-G
DN3545N8-G
DN2530N8-G
DN3535N8-G
TN2510N8-G
TN2524N8-G
TN2540N8-G
TN2501N8-G
TN2504N8-G
TP2510N8-G
TP2520N8-G
TP2522N8-G
TP2540N8-G
TP2502N8-G
DN3145N8-G
DN3135N8-G
DN1509N8-G
TN0104N8-G
VN3205N8-G
VN3205N8-G-D576
VP3203N8-G
DN2450N8-G
TN2425N8-G
TN2435N8-G
TP2424N8-G
TP2435N8-G
VN2450N8-G
VN2460N8-G
VP2450N8-G
TN5325N8-G
TN5335N8-G
TP5322N8-G



QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: MAAN-24NWLH863

Date
October 30, 2023

Qualification of GTBF as an additional assembly site for selected DNxxxxN8, TNxxxxN8, TPxxxxN8, VNxxxxN8 and VPxxxxN8 device families available in 3L SOT-89 package.



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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of GTBF as an additional assembly site for selected DNxxxxN8, TNxxxxN8, TPxxxxN8, VNxxxxN8 and VPxxxxN8 device families available in 3L SOT-89 package.
CN	E000190139
QUAL ID	R2301302 Rev. A
MP CODE	6F001QA5XL00
Part No.	VP2450N8-G
Bonding No.	BD-001595 Rev. 01
CCB No.	6432
<u>Package</u>	
Type	3L SOT-89
<u>Lead Frame</u>	
Paddle size	71 x 79 mils
Material	KFC/LY89
Surface	Spot Ag Plating
Process	Stamp
Lead Lock	No
Part Number	200000020251
Treatment	Non-Rough
<u>Material</u>	
Epoxy	CRM-1800
Wire	Au wire
Mold Compound	CEL-9240HF10L8
Plating Composition	Matte Sn



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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
GTBF241900011.000	TMPE223505514.110	2332845
GTBF241900012.000	TMPE223505514.110	2332846
GTBF241900013.000	TMPE223505514.110	233284B

Result

☒ Pass ☐ Fail ☐ _____

3L SOT-89 assembled by GTBF 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: ETS300	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: ETS300		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: ETS300 Bond Strength: Wire Pull (>6.00 grams)	JESD22-A104		0/231		Parts had been pre-conditioned at 260°C
			231(0)	0/231	Pass	77 units / lot
			15(0)	0/15	Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X Electrical Test: +25°C System: ETS300	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
			231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: -30 Volts System: HAST 6000X Electrical Test: +25°C System: ETS300	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
			231(0)	0/231	Pass	77 units / lot

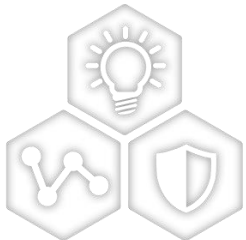
PACKAGE QUALIFICATION REPORT

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	JESD22-A103		0/45		45 units
	Electrical Test: +25°C System: ETS300		45(0)	0/45	Pass	
Solderability Temp 215°C	Steam Aging: Temp 93°C, 8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63, Pb37 System: ERS A RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22(0)	0/22 0/22 0/22	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	
Bond Line Thickness	Bond Line Thickness	SPI-45528	15(0)	15(0)	Pass	5 units / lot
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>6.00 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>35.00 grams)	CDF-AEC-Q100-001	30(0) bonds	0/30	Pass	

CCB 6432
Pre and Post Change Summary
PCN #: MAAN-24NWLH863

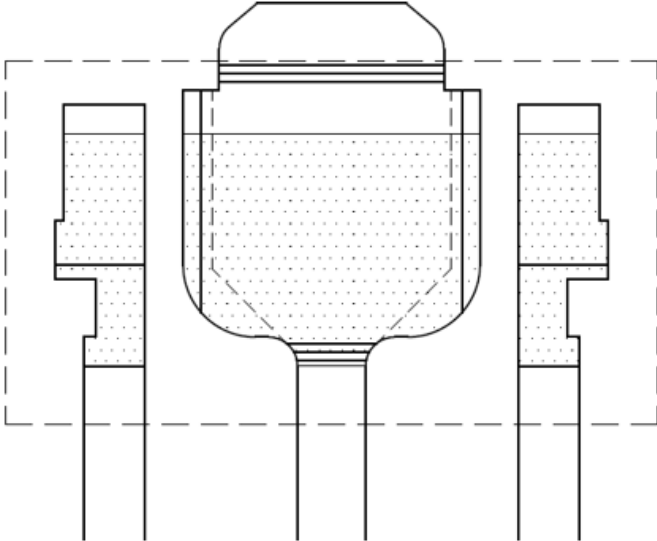
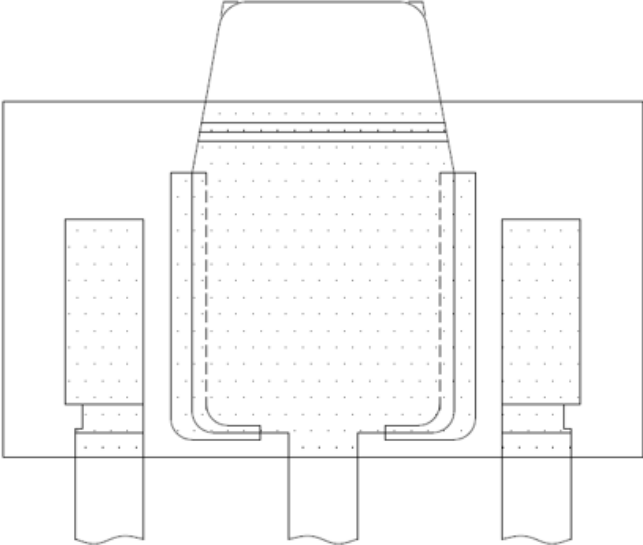


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Lead Frame Comparison

LPI	GTBF				
 <table border="1" data-bbox="257 1109 1090 1186"><tr><td>Paddle Size</td><td>79x63mils</td></tr></table>	Paddle Size	79x63mils	 <table border="1" data-bbox="1454 1109 2295 1186"><tr><td>Paddle Size</td><td>71x79mils</td></tr></table>	Paddle Size	71x79mils
Paddle Size	79x63mils				
Paddle Size	71x79mils				