MICROCHIP

Product Change Notification / JAON-23VTYQ024

Date:

14-Dec-2021

Product Category:

PoE PSE

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4611 Final Notice: Qualification of MMT as an additional assembly site for selected Microsemi PD69101ILQ-TR and PD69101ILQ-13155TR catalog part numbers (CPN) available in 24L VQFN (4x5x1.0mm) package.

Affected CPNs:

JAON-23VTYQ024_Affected_CPN_12142021.pdf
JAON-23VTYQ024_Affected_CPN_12142021.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 selected Microsemi PD69101ILQ-TR and PD69101ILQ-13155TR catalog part numbers (CPN) available in 24L VQFN (4x5x1.0mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly site	UTAC Thai Limited (UTL-1) LTD (NSEB)	Unisem Chengdu Co.,Ltd. (UNIC)	UTAC Thai Limited (UTL-1) LTD (NSEB)	Unisem Chengdu Co.,Ltd. (UNIC)	Microchip Technology Thailand (Branch) / MMT
Wire Material	CuPdAu	Au	CuPdAu	Au	CuPdAu
Die attach material	8600	8290	8600	8290	3280
Molding compound material	G700LTD	G770HP	G700LTD	G770HP	G700LTD
Lead frame material	EFTEC-64T	A194	EFTEC-64T	A194	A194
Lead frame Paddle size	114x154 mils	114x154 mils	114x154 mils	114x154 mils	114x154 mils
Lead Lock (Locking Holes)	Yes	No	Yes	No	Yes
Lead Frame comparison	See pre and post change comparison				

Impacts to Data Sheet: None

Change Impact None

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

Change Implementation Status: In Progress

Estimated First Ship Date: November 15, 2021 (date code: 2147)

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

Time Table Summary:

	March 2021					**->**	**November 2021**					**December 2021**			
Workweek	10	11	12	13	14		45	46	47	48	49	50	51	52	53
Initial PCN issue Date				x											

Final PCN Issue Date								x							
Qual Report Availability													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:
March 26, 2021: Issued initial notification.
November 10, 2021: Issued final notification.
December 14, 2021: Re-issued final notification. Updated the qualification report to Rev B.

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

Attachments:

PCN_JAON-23VTYQ024_Qual_Report_RevB.pdf
PCN_JAON-23VTYQ024 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.

CCB 4611

Pre and Post Change Summary

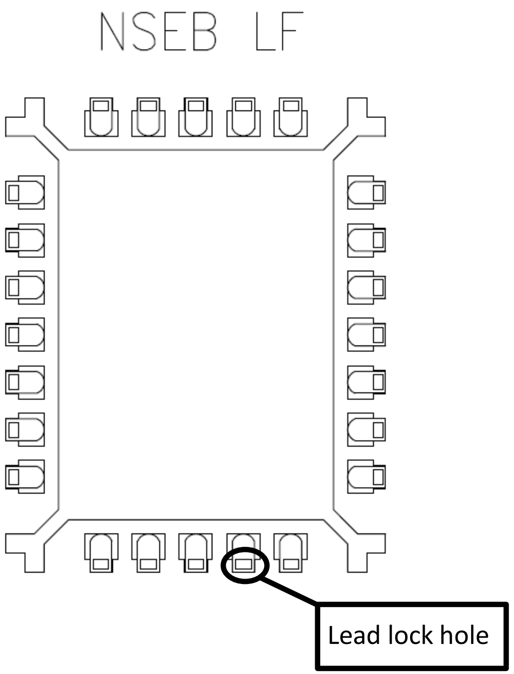
PCN#: JAON-23VTYQ024

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

SMART | CONNECTED | SECURE

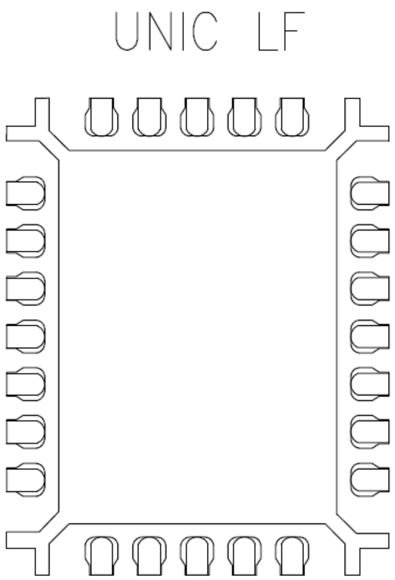
Lead Frame Comparison

NSEB



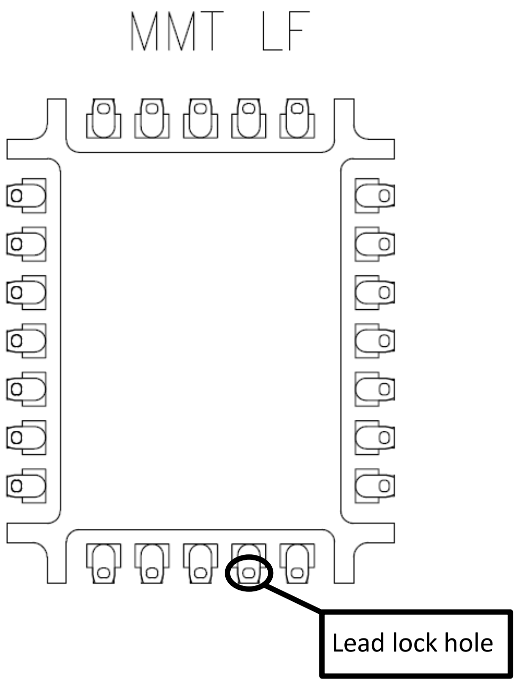
Lead frame material	EFTEC-64T
Lead frame Paddle size	114x154 mils
Lead-lock (Locking Hole)	Yes

UNIC



Lead frame material	A194
Lead frame Paddle size	114x154 mils
Lead-lock (Locking Hole)	No

MMT



Lead frame material	A194
Lead frame Paddle size	114x154 mils
Lead-lock (Locking Hole)	Yes

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

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN# JAON-23VTYQ024

Date

November 29, 2021

Qualification of MMT as an additional assembly site for selected Microsemi PD69101ILQ-TR and PD69101ILQ-13155TR catalog part numbers (CPN) available in 24L VQFN (4x5x1.0mm) package.

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for selected Microsemi PD69101ILQ-TR and PD69101ILQ-13155TR catalog part numbers (CPN) available in 24L VQFN (4x5x1.0mm)
CN	ES355975
QUAL ID	R2100444 Rev B
MP CODE	U0151Q5FCA01
Part No.	PD69101ILQ-13155TR
Bonding No.	BDM-002819 Rev. B
CCB No.	4611
<u>Package</u>	
Type	24L VQFN
Package size	4 x 5 x 1.0 mm
<u>Lead Frame</u>	
Paddle size	114 x 154 mils
Material	A194
Surface	Bare Cu
Process	Etched
Lead Lock	Yes
Part Number	10102405
Treatment	BOT
<u>Material</u>	
Epoxy	3280
Wire	CuPdAu
Mold Compound	G700LTD
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-220300001.000	MC04921225644.100	2115RA4
MMT-220201309.000	MC04921215504.100	2114RA2
MMT-221001906.000	MC04921225677.100	2122AMG

Result ☒ Pass ☐ Fail ☐ ____________________

24L VQFN (4x5x1.0 mm) assembled by MMT 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
Moisture/Reflow Sensitivity Classification Test (At MSL Level 3)	30°C/ 60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020E)	IPC/JEDEC J-STD-020E	135	0/135	Pass	
Precondition Prior Perform Reliability Tests **(At MSL Level 3)**	**Electrical Test:** +25°C and 85°C System: ETS	JESD22A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			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 85°C System: ETS			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	Pass	77 units Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 85°C System: ETS		231(0)	0/231	Pass	
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +25°C and 85°C System: ETS		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>4.00 grams)		15(0)	0/15	Pass	
	Bond Shear (>18.00 grams)		15(0)	0/15	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 57 Volts System: HAST 6000X	JESD22-A110		231		
	Electrical Test: +25°C and 85°C System: ETS		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. **Bias Volt:** 57 Volts System: HAST 6000X			231		
	Electrical Test: +25°C and 85°C System: ETS		231(0)	0/231	Pass	77 units / lot
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: ETS		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: ETS		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 85°C System: ETS	JESD22-A103	60(0)	60 60(0)	Pass	20 units / lot
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	
Wire sweep	Wire sweep Inspection 5 Wires / lot		45(0) Wires	0/45	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 (>4.00 grams) Bond Shear (>18.00 grams)	Mil. Std. 883-2011 CDF-AECQ100-001	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	

Affected Catalog Part Numbers (CPN)

PD69101ILQ-TR
PD69101ILQ-13155TR