Product Change Notification / RMES-24GUAK186

Date:

25-May-2023

Product Category:

Power MOSFET Drivers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6294 Final Notice: Qualification of MMT as an additional assembly site for selected MCP14A090xx, MCP14A120xx, MCP14A015xx, MCP14A060xx, MCP14A045xx and MCP14A03xx device families available in 8L TDFN (2x3x0.8mm) package.

Affected CPNs:

RMES-24GUAK186_Affected_CPN_05252023.pdf
RMES-24GUAK186_Affected_CPN_05252023.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 MCP14A090xx, MCP14A120xx, MCP14A015xx, MCP14A060xx, MCP14A045xx and MCP14A03xx device families available in 8L TDFN (2x3x0.8mm) package.

Pre and Post Change Summary:

	Pre Change		Post Change		
Assembly Site	UTAC Thai Limited (UTL-1) LTD./ NSEB	UTAC Thai Limited (UTL-3)	UTAC Thai Limited (UTL-1) LTD./ NSEB	UTAC Thai Limited (UTL-3)	Microchip Technology Thailand (Branch) MMT
Wire Material	Au	Au	Au	Au	Au
Die Attach Material	8600	8600	8600	8600	3280
Molding Compound Material	G700LTD	G700LTD	G700LTD	G700LTD	G700LTD
Lead-Frame Material	C194	C194	C194	C194	A194*
Lead-lock Design (Locking Hole, Half Etched, Dimple, etc.)	Yes	Yes	Yes	Yes	No

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

Impacts to Data Sheet: None

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: June 15, 2023 (date code: 2324)

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

Time Table Summary:

	May 2023				>	June 2023				
Workweek	18	19	20	21		22	23	24	25	26
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:
May 25, 2023: Issued final notification. Attached is the Qualification Report. Provided estimated first ship date to be on June 15, 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_RMES-24GUAK186_Qual_Report.pdf
PCN_RMES-24GUAK186_Pre_and_Post Change Summary.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.

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: RMES-24GUAK186

Date:
May 03, 2023

Qualification of MMT as an additional assembly site for selected MCP14A090xx, MCP14A120xx, MCP14A015xx, MCP14A060xx, MCP14A045xx and MCP14A03xx device families available in 8L TDFN (2x3x0.8mm) package will qualify by similarity (QBS).
This is a Q100 Grade1 Qualification.

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PACKAGE QUALIFICATION REPORT

Purpose **Qualification of MMT as an additional assembly site for selected MCP14A090xx, MCP14A120xx, MCP14A015xx, MCP14A060xx, MCP14A045xx and MCP14A03xx device families available in 8L TDFN (2x3x0.8mm) package will qualify by similarity (QBS). This is a Q100 Grade1 Qualification.**

CN	E000074742
QUAL ID	R2101135 rev. A
MP CODE	VGKC2Y5QXA00
Part No.	MCP14A0154T-E/MNY
Bonding No.	BD-000235 Rev. 02
CCB No.	4672 and 6294
Package	
Type	8L TDFN
Package size	2 x 3 x 0.8 mm
Lead Frame	
Paddle size	83 x 71 mils
Material	A194
Surface	NiPdAu
Process	Etched
Lead Lock	No
Part Number	10100853
Material	
Epoxy	3280
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	NiPdAu

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PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
MMT-223202130.000	VS01921392675.500	2144M98
MMT-223202131.000	VS01921392675.500	2144M9A
MMT-223201699.000	VS01921392675.500	214426W

Result [X] Pass [ ] Fail [ ] _____

8L TDFN (2x3x0.8 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
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C and 125°C System: ETS88	JESD22-A113	693(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 and 125°C System: ETS88			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: +125°C System: ETS88		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 2.50 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 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: ETS88		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 18 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 125°C System: ETS88		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, 500 hrs System: SHEL LAB **Electrical Test:** +25°C and 125°C System: ETS88	JESD22-A103	 45(0)	45 0/45	 Pass	45 units
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: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 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: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 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) Bond Shear (>15.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	

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Affected Catalog Part Numbers (CPN)

MCP14A0901T-E/MNY
MCP14A0902T-E/MNY
MCP14A1201T-E/MNY
MCP14A1202T-E/MNY
MCP14A0153T-E/MNY
MCP14A0154T-E/MNY
MCP14A0155T-E/MNY
MCP14A0601T-E/MNY
MCP14A0602T-E/MNY
MCP14A0453-E/MNY
MCP14A0453T-E/MNY
MCP14A0454-E/MNY
MCP14A0454T-E/MNY
MCP14A0455-E/MNY
MCP14A0455T-E/MNY
MCP14A0303-E/MNY
MCP14A0303T-E/MNY
MCP14A0304-E/MNY
MCP14A0304T-E/MNY
MCP14A0305-E/MNY
MCP14A0305T-E/MNY

CCB 6294
Pre and Post Change Summary
PCN #: RMES-24GUAK186

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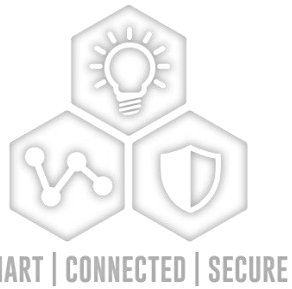
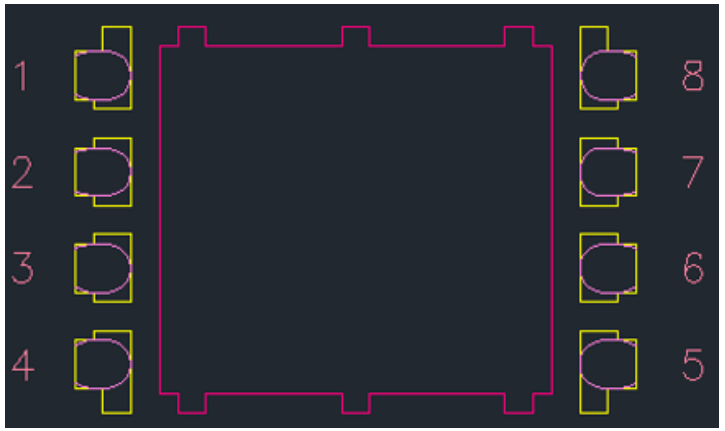
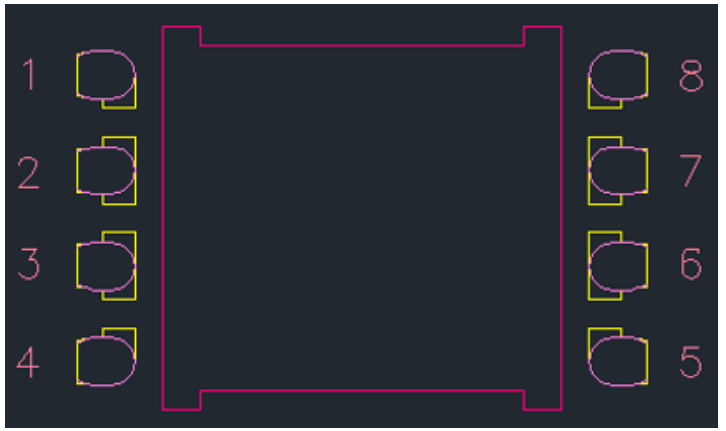


Pre and Post Change – Lead frame comparison

	NSEB (UTL-1) / UTL-3	MMT
Lead Frame comparison		

Leadframe material	C194
Lead-lock Design (Locking Hole, Half Etched, Dimple, etc.)	Yes

Leadframe material	A194*
Lead-lock Design (Locking Hole, Half Etched, Dimple, etc.)	No

Note: * C194, A194 or CDA194 Lead frame material are the same, it is just a MCHP internal labelling difference.
Note: Not fit to scale for Lead frame drawing