MICROCHIP

Product Change Notification - JAON-04ZRSZ809

Date:
24 Feb 2020
Product Category:
Power Management - Power Switches
Affected CPNs:

Notification subject:
CCB 3472 Final Notice: Qualification of MTAI as a new assembly site for UCS2112 and UCS2113 device families available in 20L QFN (4x4mm) package.
Notification text:

PCN Status:
Final notification
PCN Type:
Manufacturing Change
Microchip Parts Affected:
Please open one of the icons found in the Affected CPNs section above.
NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls)
Description of Change:
Qualification of MTAI as a new assembly site for UCS2112 and UCS2113 device families available in 20L QFN (4x4mm) package.

Pre Change:
Assembled at ASE assembly site using EN-4900 die attach material and G631H mold compound material.
Post Change:
Assembled at MTAI assembly site using 8008MD die attach material and G700LTD mold compound material.
Pre and Post Change Summary

	Pre Change	Post Change
Assembly Site	ASE Inc. (ASE)	Microchip Technology Thailand (MTAI)
Lead frame material	C194	C194
Bond wire material	CuPdAu	CuPdAu
Die attach material	EN-4900	8008MD
Mold compound material	G631H	G700LTD

Impacts to Data Sheet:
None.
Change Impact:
None.
Reason for Change:
To improve on-time delivery performance by qualifying MTAI assembly site using 8008MD die attach material and G700LTD mold compound material.

Change Implementation Status:
In Progress
Estimated First Ship Date:
March 30, 2020 (date code: 2014)
NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

	January 2020					February 2020				March 2020				
Workweek	01	02	03	04	05	06	07	08	09	10	11	12	13	14
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:
January 27, 2020: Issued initial notification.
February 24, 2020: Issued final notification. Attached the qualification report. Updated the affected CPN list.
The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.
Attachment(s):
PCN_JAON-04ZRSZ809_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)

UCS2112-1-V/G4
UCS2112-2-V/G4
UCS2112-1-V/G4-V01
UCS2112-2-V/G4-V02
UCS2112T-1-V/G4
UCS2112T-2-V/G4
UCS2112T-1-V/G4-V01
UCS2112T-2-V/G4-V02
UCS2113-1-V/G4
UCS2113-2-V/G4
UCS2113T-1-V/G4
UCS2113T-2-V/G4
UCS2113T-1-V/G4VAO

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: JAON-04ZRSZ809

Date
January 31, 2020

Qualification of MTAI as a new assembly site for UCS2112 and UCS2113 device families available in 20L QFN (4x4mm) package. This qualification is per Automotive AEC-Q006 guidelines.

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MTAI as a new assembly site for UCS2112 and UCS2113 device families available in 20L QFN (4x4mm) package. This qualification is per Automotive AEC-Q006 guidelines.
CCB No	3472
CN	ES328957
QUAL ID	Q19172 Rev. A
MP CODE	TA7A19G4XV01
Part No.	UCS2112-1-V/G4-V01
Bonding No.	BDM-002301 Rev. A

<u>Package</u>

Type	20L QFN
Package size	4x4x0.9 mm

<u>Lead Frame</u>

Paddle size	114 x 114 mils
Material	C194
Surface	Bare Copper
Process	Etched
Lead Lock	No
Part Number	10102017

<u>Material</u>

Epoxy	8008MD (Conductive WBC)
Wire	CuPdAu
Mold Compound	G700LTD
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI203302309.000	TC05920263345.100	194628D
MTAI203300386.000	TC05920263345.100	1946W7W
MTAI203302407.000	TC05920263345.100	19462R5

Result [X] Pass [ ] Fail [ ] ___________________

20L QFN (4x4x0.9 mm) assembled by MTAI 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
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/ 85%RH Moisture Soak 168 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 1)	**Electrical Test :**+25°C and 105°C System: J750	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max			693		
	System: Vitronics Soltec MR1243					
	Electrical Test :+25°C and 105°C System: J750			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: + 105°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)		45 (0)	0/45	Pass	
	Stress Condition: -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H			231		
	Electrical Test: + 105°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)		45 (0)	0/45	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:** 5.5 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 25°C and 105°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)		45 (0)	0/45	Pass	
	Stress Condition: +130°C/85%RH, 192 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X			231		
	Electrical Test: + 25°C and 105°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)		45 (0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT						
Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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: J750		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: J750		231(0)	0/231	Pass	
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 500 hrs	JESD22-A103		135		45 units / lot
	Electrical Test :+25°C and 105°C System: J750		135(0)	0/135	Pass	
	Stress Condition: Bake 175°C, 1000 hrs System: SHEL LAB			135		
	Electrical Test :+25°C and 105°C System: J750		135(0)	0/135	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	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Bond Strength Data Assembly	Wire Pull (> 4.00 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>18.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	