



## Product Change Notification - JAON-04ZRSZ809

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**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.

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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.



**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.**



## MICROCHIP 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

### Package

**Type** 20L QFN  
**Package size** 4x4x0.9 mm

### Lead Frame

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

### Material

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



# MICROCHIP 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

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
<b>Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)</b>	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 C J-STD- 020E	135	0/135	Pass	

<b>Precondition Prior Perform Reliability Tests (At MSL Level 1)</b>	<b>Electrical Test</b> :+25°C and 105°C System: J750	JESD22- A113	693(0)	693	Pass	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 System: Vitronics Soltec MR1243			693		
	<b>Electrical Test</b> :+25°C and 105°C System: J750			0/693		

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H <b>Electrical Test:</b> + 105°C System: J750	JESD22- A104	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C
	<b>Bond Strength:</b> Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)					
	<b>Stress Condition:</b> -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H <b>Electrical Test:</b> + 105°C System: J750		231(0)	231 0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)					

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> + 25°C and 105°C System: J750		231(0)	0/231	Pass	77 units / lot
	<b>Bond Strength:</b> Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)		45 (0)	0/45	Pass	
	<b>Stress Condition:</b> +130°C/85%RH, 192 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X			231		
	<b>Electrical Test:</b> + 25°C and 105°C System: J750		231(0)	0/231	Pass	
	<b>Bond Strength:</b> 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
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C System: J750		231(0)	0/231	Pass	77 units / lot
	<b>Stress Condition:</b> +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	<b>Electrical Test:</b> +25°C System: J750		231(0)	0/231	Pass	
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 500 hrs	JESD22-A103		135		45 units / lot
	<b>Electrical Test</b> :+25°C and 105°C System: J750		135(0)	0/135	Pass	
	<b>Stress Condition:</b> Bake 175°C, 1000 hrs System: SHEL LAB			135		
	<b>Electrical Test</b> :+25°C and 105°C System: J750		135(0)	0/135	Pass	
<b>Solderability Temp 245°C</b>	<b>Steam Aging:</b> 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
<b>Bond Strength</b> <b>Data Assembly</b>	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	

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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