

#### Product Change Notification / MAAN-29WJYU499

# Date:

20-Jun-2023

# **Product Category:**

8-bit Microcontrollers, Capacitive Touch Sensors, Digital Temperature Sensors, Temperature Sensors

# **PCN Type:**

Manufacturing Change

# **Notification Subject:**

CCB 6229 Initial Notice: Qualification of MMT as an additional assembly site for selected EMC14xx and CAP12xx device families available in 8L TDFN (2x3x0.75mm) package.

## Affected CPNs:

MAAN-29WJYU499\_Affected\_CPN\_06202023.pdf MAAN-29WJYU499\_Affected\_CPN\_06202023.csv

# Notification Text:

PCN Status:Initial 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 EMC14xx and CAP12xx device families available in 8L TDFN (2x3x0.75mm) package.

#### Pre and Post Change Summary:

	Pre Change	Post Change			
Assembly Site	Amkor	Amkor Technology	Microchip Technology		

	Technology Philippines (P3/P4), INC. (ATP7)	Philippines (P3/P4), INC. (ATP7)	Thailand - (Branch) (MMT)					
Wire Material	Au	Au	Au					
Die Attach Material	AMK-06	AMK-06	8600					
Molding Compound Material	GE-7470LA	GE-7470LA	G700LTD					
Lead-Frame Material	C194	C194	A194*					
Lead-Frame Lead-lock	No	No	Yes					
Lead-Frame Design	See Pre and Post Change comparison							

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 ImpactNone

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

#### Change Implementation Status: In Progress

#### Estimated Qualification Completion Date: July 2023

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

#### Time Table Summary:

	June 2023					July 2023				
Workweek	2 2	2 3	2 4	2 5	2 6	2 7	2 8	2 9	3 0	3 1
Initial PCN Issue Date				х						
Qual Report Availability									х	
Final PCN Issue Date									х	

Method to Identify Change: Traceability code

**Qualification Plan:**Please open the attachments included with this PCN labeled as PCN\_#\_Qual\_Plan.

Revision History: June 20, 2023: Issued initial notification.

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-29WJYU499\_Qual\_Plan.pdf PCN\_MAAN-29WJYU499\_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 <u>receive Microchip PCNs via email</u> 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 <u>change your PCN profile</u>, <u>including opt out</u>, please go to the <u>PCN home page</u> select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections. MAAN-29WJYU499 - CCB 6229 Initial Notice: Qualification of MMT as an additional assembly site for selected EMC14xx and CAP12xx device families available in 8L TDFN (2x3x0.75mm) package.

Affected Catalog Part Numbers (CPN)

EMC1412-A-AC3-TR EMC1462-A-AC3-TR EMC1412-1-AC3-TR EMC1442-A-AC3-TR CAP1293-1-AC3-TR CAP1203-1-AC3-TR



# **QUALIFICATION PLAN SUMMARY**

# PCN #: MAAN-29WJYU499

Date: March 30, 2023

Qualification of MMT as an additional assembly site for selected EMC14xx and CAP12xx device families available in 8L TDFN (2x3x0.75mm) package.

Purpose:	_Qualification of MMT as an additional assembly site for selected EMC14xx and CAP12xx device families available in 8L TDFN (2x3x0.75mm) package.
CCB No	6229
MP Code:	TG105Y8QXC01
Part No.:	CAP1293-1-AC3-TR
BD No:	_ BD-000913-01
Package:	
Туре:	8L TDFN
Width or Size:	_ 2x3x0.75 mm
Leadframe:	
Paddle Size:	67 x 75 mils
Paddle Plating:	NiPdAu
Process:	ETCHED
Treatment:	PPF+ME2
Lead Lock:	YES
Material:	_ A194
Part Number:	10100863
<u>Wire:</u>	
Material:	Au
Die Attach Epoxy:	
Part Number	8600
Conductive	Yes
Mold Compound:	
Part Number:	_G700LTD
Lead Finish:	_ 100% NiPdAu

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Special Instructions
Standard Pb- free Solderability	J-STD-002D; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5	-	MTAI	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	-	MTAI	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5		5	-	MTAI	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30		5	-	MTAI	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	-	ΜΤΑΙ	

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Special Instructions
Preconditioning - Required for surface mount devices	JESD22-A113. +150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at +25°C. MSL-1/260°C	231	15	3	738	0	15	SIGT	MTAI	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	JESD22-A110. +130°C/85% RH for 96 hours Electrical test pre and post stress at +25°C	77	5	3	246	0	10	SIGT	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning. SIGT only test at room temp.
UHAST	JESD22-A118. +130°C/85% RH for 96 hrs Electrical test pre and post stress at +25°C	77	5	3	246	0	10	SIGT	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	JESD22-A10465°C to +150°C for 500 cycles. Electrical test pre and post stress at 25C (Room temp); 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	SIGT	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning. SIGT only test at room temp.



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# **Lead Frame Comparison**

AT	P7	MMT						
		Lead-lock						
Lead-Frame Material	C194		Lead-Frame Material	*A194				
Lead-lock	No		Lead-lock	Yes				

**Note:** The lead lock hole fills with mold compound during the assembly process and provides improved protection against moisture penetration around the interface edges between pins and mold compound.

\* C194, A194 or CDA194 Lead-Frame material are the same, it is just a MCHP internal labelling difference.

