Product Change Notification / ASER-13KWIQ013

Date:

15-Dec-2021

Product Category:

32-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4978 Initial Notice: Qualification of MMT as an additional assembly site for selected ATSAME5xxx and ATSAMD5xxx device families available in 128L TQFP (14x14x1mm) package.

Affected CPNs:

ASER-13KWIQ013_Affected_CPN_12152021.pdf
ASER-13KWIQ013_Affected_CPN_12152021.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 ATSAME5xxx and ATSAMD5xxx device families available in 128L TQFP (14x14x1mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site	ASE Inc. (ASE)	ASE Inc. (ASE)	Microchip Technology Thailand (MMT)
Wire Material	Au/CuPdAu	Au/CuPdAu	CuPdAu
Die Attach Material	CRM-1076WA	CRM-1076WA	3280
Molding Compound Material	G631H	G631H	G700HA
Lead-Frame Material	C7025	C7025	C7025
Lead-Frame Paddle Size	240x240 mils	240x240 mils	190x190 mils
	See Pre and Post Change for Comparison		

Impacts to Data Sheet: None

Change Impact None

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

Change Implementation Status: In Progress

Estimated Qualification Completion Date: April 2022

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:

	December 2021					**>**	**April 2022**				
Workweek	49	50	51	52	1		14	15	16	17	18
Initial PCN Issue Date				x							
Qual Report Availability										x	
Final PCN Issue Date										x	

Method to Identify Change: Traceability code

Qualification Plan: Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History: December 15, 2021: 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_ASER-13KWIQ0131_Pre and Post Change Summary.pdf
PCN_ASER-13KWIQ013 Qual Plan.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 PLAN SUMMARY

PCN #: ASER-13KWIQ013

Date:
December 09, 2021

Qualification of MMT as an additional assembly site for selected ATSAME5xxx and ATSAMD5xxx device families available in 128L TQFP (14x14x1mm) package.

Purpose: **Qualification of MMT as an additional assembly site for selected ATSAME5xxx and ATSAMD5xxx device families available in 128L TQFP (14x14x1mm) package.**

CCB: **4978**

Misc.	**Assembly site**	MMT
	BD Number	BD-000266 rev02
	MP Code (MPC)	65106YZ2XC01
	Part Number (CPN)	ATSAME54P20A-AFT
Lead-Frame	**Paddle size**	190x190 mils
	Material	C7025
	Surface	Double Ag Ring Plated
	Treatment	None
	Process	Stamped
	Lead-lock	No
	Part Number	10112804
	Lead Plating	Matte Tin
	Strip Size	70x250mm
	Strip Density	30 units/strip
Bond Wire	**Material**	CuPdAu
Die Attach	**Part Number**	3280
	Conductive	Yes
MC	**Part Number**	G700HA
PKG	**PKG Type**	TQFP
	Pin/Ball Count	128
	PKG width/size	14x14x1mm

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours of 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	Standard Pb-free solderability is the requirement.
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0	5	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5	0	5	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5	
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5	
HTSL (High Temp Storage Life)	JESD22-A103 +175°C *2x Stress*	1st Readpoint: Grade 1: 500 hrs (+175°C) 2nd Readpoint: Grade 1: 1000 hrs (+175°C)	Grade 1: +25°C, +125°C	45	5	3	150	0	21 - 167	Perform per the requirements in AEC-Q100/Q101. Spares should be properly identified.
Preconditioning - Required for surface mount devices	J-STD-020 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. MSL-3/260C		Grade 1: +25°C	231	15	3	738	0	15	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	JESD22-A101 or A110 +130°C/85% RH for 96 hrs *2x Stress*	1st Readpoint: Grade 1: 96 hrs (+130°C/85% RH) 2nd Readpoint: Grade 1: 192 hrs (+130°C/85% RH)	Grade 1: +25°C, +125°C	77	5	3	246	0	10 - 22	Perform per the requirements in AEC-Q006. Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

uHAST	JESD22-A102, A118, or A101 +130°C/85% RH for 96 hrs	Grade 0: 96 hrs (+130°C/85% RH) Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	JESD22-A104 and Appendix 3 -65°C to +150°C *2x Stress*	1st Readpoint: Grade 1: 500 cycles (-65ºC to 150ºC) 2nd Readpoint: Grade 1 1000 cycles (-65ºC to 150ºC)	Grade 1: +125°C	77	5	3	246	0	15 - 120	Perform per the requirements in AEC-Q006. Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Wire Bond Integrity (AEC-Q006 Requirements)	AEC-Q006									Wire pull / ball shear is performed after stress testing and decapsulation.
Cross Sectioning (AEC-Q006 Requirements)	IPC-TM-650, Methods 2.1.1 and 2.1.1.2			1	0	3	3		5	

CCB 4978
Pre and Post Change Summary
PCN #: ASER-13KWIQ013

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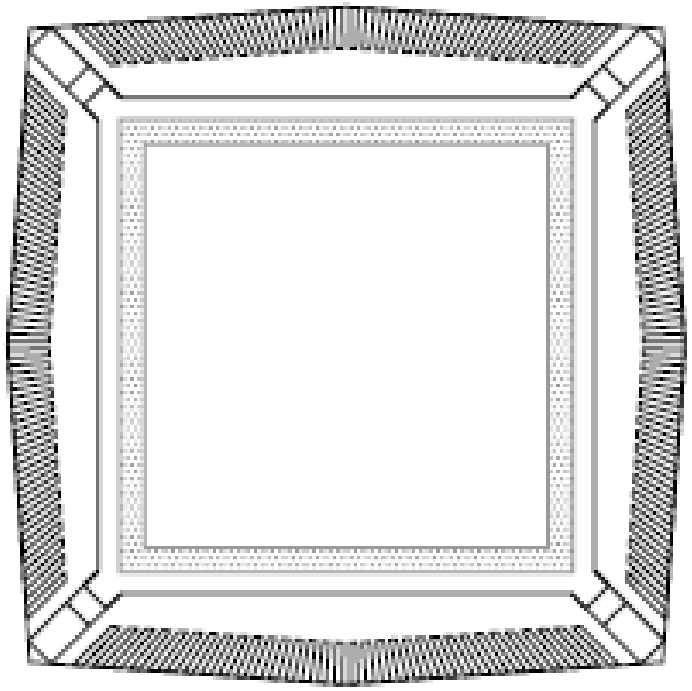
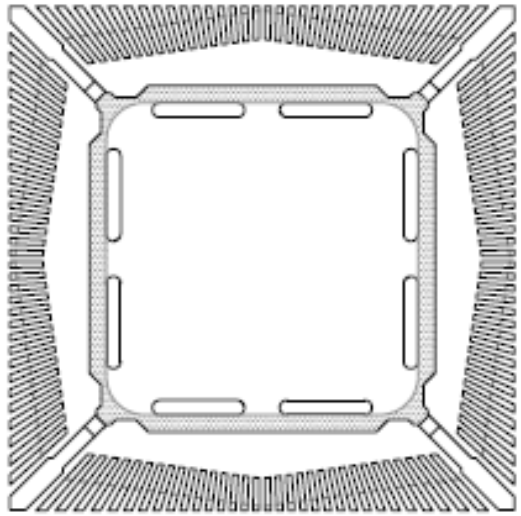
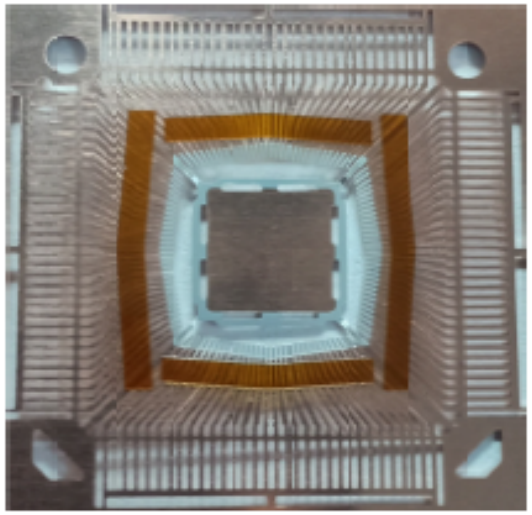
Qualification of MMT as an additional assembly site for selected ATSAME5xxx and ATSAMD5xxx device families available in 128L TQFP (14x14x1mm) package.

Lead Frame Design Comparison

ASE	MMT
	 
Paddle Size: 240x240 mils	Paddle Size: 190x190 mils

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Affected Catalog Part Numbers (CPN)

ATSAME54P20A-AF
ATSAME54P19A-AF
ATSAMD51P19A-AF
ATSAMD51P20A-AF
ATSAME54P19A-AZ
ATSAME54P20A-AZ
ATSAMD51P19A-AZ
ATSAMD51P20A-AZ
ATSAME54P20A-AZ510
ATSAME54P19A-AZVAO
ATSAME54P20A-AZVAO
ATSAMD51P19A-AU
ATSAMD51P20A-AU
ATSAME54P19A-AU
ATSAME54P20A-AU
ATSAMD51P19A-AU-EFP
ATSAMD51P20A-AU-EFP
ATSAME54P19A-AU-EFP
ATSAME54P20A-AU-EFP
ATSAMD51P19A-AUN01
ATSAMD51P19A-AUT
ATSAMD51P20A-AUT
ATSAME54P19A-AUT
ATSAME54P20A-AUT
ATSAMD51P19A-AUT-EFP
ATSAMD51P20A-AUT-EFP
ATSAME54P19A-AUT-EFP
ATSAME54P20A-AUT-EFP
ATSAME54P20A-AUTEK1
ATSAME54P20A-AFT
ATSAME54P19A-AFT
ATSAMD51P19A-AFT
ATSAMD51P20A-AFT
ATSAME54P20A-AZT
ATSAME54P19A-AZT
ATSAMD51P19A-AZT
ATSAMD51P20A-AZT
ATSAME54P20A-AZT510
ATSAME54P19A-AZTVAO
ATSAME54P20A-AZTVAO