



Product Change Notification - KSRA-06YWXI812

Date:

06 Mar 2019

Product Category:

32-bit Microcontrollers; Others

Affected CPNs:**Notification subject:**

CCB 3449 Final Notice: Qualification of MMT as an additional assembly site for selected Atmel products of 66.1K and 66.2K technologies available in 48L VQFN (7x7x1mm) 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 MMT as an additional assembly site for selected Atmel products of 66.1K and 66.2K technologies available in 48L VQFN (7x7x1mm) package.

Pre Change:

Assembled at ASE using palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900F die attach material, G631H molding compound material and C7025 lead frame material with MSL 3 classification

Post Change:

Assembled at ASE using palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900F die attach material, G631H molding compound material and C7025 lead frame material with MSL 3 classification

Assembled at MMT using gold (Au) bond wire, 3280 die attach material, G700LTD molding compound material and C194 lead frame material with MSL 1 classification

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Inc./ ASE	ASE Inc./ ASE	Microchip Technology Thailand (Branch) / MMT
Wire material	CuPdAu	CuPdAu	Au
Die attach material	EN-4900F	EN-4900F	3280
Molding compound material	G631H	G631H	G700LTD
Lead frame material	C7025	C7025	C194
MSL Classification	MSL 3	MSL 3	MSL 1

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve on-time delivery and performance by qualifying MMT as an additional assembly site.

**Change Implementation Status:**

In Progress

Estimated First Ship Date:

April 6, 2019 (date code: 1914)

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

Time Table Summary:

	July 2018					-->	March 2019					April 2019				
Workweek	27	28	29	30	31		09	10	11	12	13	14	15	16	17	18
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:

July 19, 2018: Issued initial notification.

August 1, 2018: Re-issued initial notification to correct the typo MMT and 3280 die attach material under post change.

March 06, 2019: Issued final notification. Update subject and description and update post change to include ASE. Attached the Qualification Report. Revised the affected parts list. Provided estimated first ship date on April 06, 2019.

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_KSRA-06YWXI812_Qual_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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Affected Catalog Part Numbers (CPN)

ATSAMC20G15A-MNT
ATSAMC20G15A-MUT
ATSAMC20G16A-MNT
ATSAMC20G16A-MUT
ATSAMC20G17A-MNT
ATSAMC20G17A-MUT
ATSAMC20G18A-MNT
ATSAMC20G18A-MUT
ATSAMC21G15A-MNT
ATSAMC21G15A-MUT
ATSAMC21G16A-MNT
ATSAMC21G16A-MUT
ATSAMC21G17A-MNT
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ATSAMD20G14A-MUTA2
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ATSAML21G18B-MNT
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ATSAML22G16A-MUT
ATSAML22G17A-MUT
ATSAML22G18A-MUT



QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN#: KSRA-06YWXI812

Date
February 12, 2019

**Qualification of MMT as an additional assembly site for
selected Atmel products of 66.1K and 66.2K technologies
available in 48L VQFN (7x7x1mm) package.**

Purpose: Qualification of MMT as an additional assembly site for selected
Atmel products of 66.1K and 66.2K technologies available in 48L
VQFN (7x7x1mm) package

QUAL ID: QTP3454 Rev. B

CCB No.: 3449

<u>Misc.</u>	Assembly site	MMT
	BD Number	BDM-001871 rev.A
	MP Code (MPC)	661P2QT3BC08
	Part Number (CPN)	ATSAMC21G18A-MNT
<u>Lead-Frame</u>	Paddle size	217x217 mils
	Material	C194
	Surface	Bare Cu on paddle
	Treatment	Roughening
	Process	Etched
	Lead-lock	Yes
	Part Number	10104803
	Lead Plating	Matte Tin
<u>Bond Wire</u>	Material	Au
<u>Die Attach</u>	Part Number	3280
	Conductive	Yes
<u>MC</u>	Part Number	G700LTD
<u>PKG</u>	PKG Type	VQFN
	Pin/Ball Count	48
	PKG width/size	7x7x0.9 mm
<u>Die</u>	Die Thickness	11 mils
	Die Size	135.3 x 124.5 mils
	MSL	MSL1/260

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-191501968.000	U08D919138466.000#09	1828TSP
MMT-191501969.000	U08D919138466.000#09	1828TSQ
MMT-191501970.000	U08D919138466.000#09	1828TSR

Result



Pass



Fail



SAMC21 661P2 in VQFN 48 Package using 0.8 Au wire from MMT assembly pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package is qualified 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: Climats Excal 5423-HE 3x Convection-Reflow 265°C max System: Mancorp CR.5000F (IPC/JEDEC J-STD-020E)	IPC/JEDEC	45 units per lot	Lot 1 0/45	Pass	
				Lot 2 0/45	Pass	
				Lot 3 0/45	Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C System: Magnum Bake 150°C, 24 hrs System: HERAEUS 85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 265°C max System: Mancorp CR.5000F Electrical Test :+25°C System: Magnum	JESD22-A113	300 units per lot	Lot 1 0/300	Pass	Good Devices
				Lot 2 0/300	Pass	
				Lot 3 0/300	Pass	
Temp Cycle	Stress Condition: (Standard) -65°C to +150°C, 500 Cycles System : Votsch VTS ² 7012 Electrical Test: +25°C, 125°C System: Magnum	JESD22-A104	88 units per lot	Lot 1 0/88	Pass	Parts had been pre-conditioned at 260°C
				Lot 2 0/88	Pass	
				Lot 3 0/88	Pass	
	Bond Strength: Wire Pull (> 1.75 grams) Bond <i>Shear</i> (>12.6 grams) System: Dage		5 units per lot	Lot 1 0/5	Pass	
				Lot 2 0/5	Pass	
				Lot 3 0/5	Pass	
HAST	Stress Condition: (Standard) + 130°C, 85%RH, 96 hrs. Bias Voltage: 5.5 Volts System: HIRAYAMA HASTEST PC-422R8 Electrical Test: +25°C, 125°C System: Magnum	JESD22-A110	80 per lot	Lot 1 0/79	Pass	Parts had been pre-conditioned at 260°C
				Lot 2 0/80	Pass	
				Lot 3 0/80	Pass	
UNBIASED HAST	Stress Condition: (Standard) + 130°C, 85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8 Electrical Test: +25°C System: Magnum	JESD22-A110	80 units per lot	Lot 1 0/80	Pass	Parts had been pre-conditioned at 260°C
				Lot 2 0/80	Pass	
				Lot 3 0/80	Pass	

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, 504 hrs System: HERAEUS Electrical Test: +25°C, 125°C System: Magnum	JESD22-A103	90 units per lot	Lot 1 0/90 Lot 2 0/90 Lot 3 0/90	Pass Pass Pass	
Bond Strength, 0 Hour	System: Dage Wire Pull (> 1.75 grams) Bond Shear (>12.6 grams)		5 units per lot	Lot 1 0/5 Lot 2 0/5 Lot 3 0/5	Pass Pass Pass	
PHYSICAL DIMENSIONS	Physical Dimension, 30 units from 3 lots	JESD22 - B100/B108	10 units per lot	Lot 1 0/10 Lot 2 0/10 Lot 3 0/10	Pass Pass Pass	
Solderability Temp 245°C	Bake: Temp 155°C,4Hrs System: Oven Solder Bath: Temp.245°C Solder material: SAC305 Visual Inspection: External Visual Inspection	JESD22B -102E	15 from 1 lot	0/15	Pass	
Bond Strength Data Assembly	Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)	JESD22-B116	30 (0) Wires 30 (0) Wires	0/30 0/30	Pass	