



Product Change Notification - KSRA-09FBAZ324

Date:

07 Jun 2019

Product Category:

32-bit Microcontrollers

Affected CPNs:**Notification subject:**

CCB 3367 Final Notice: Qualification of MMT as an additional assembly site for selected Atmel products available in 32L VQFN (5x5x1.0) package using gold (Au) bond wire

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 available in 32L VQFN (5x5x1.0) package using gold (Au) bond wire

Pre Change:

Assembled at ASCL using palladium coated copper with gold flash (CuPdAu) bond wire

Assembled at ATP7 using copper palladium (CuPd) bond wire

Assembled at MTAI using gold (Au) bond wire

Post Change:

Assembled at ASCL using palladium coated copper with gold flash (CuPdAu) bond wire

Assembled at ATP7 using copper palladium (CuPd) bond wire

Assembled at MTAI using gold (Au) bond wire

Assembled at MMT using gold (Au) bond wire

Pre and Post Change Summary:

	Pre Change			Post Change			
Assembly Site	ASE Group Chung-Li (ASCL)	Amkor Technology Philippines (P3/P4), INC. (ATP 7)	Microchip Technology Thailand (HQ) (MTAI)	ASE Group Chung-Li (ASCL)	Amkor Technology Philippines (P3/P4), INC. (ATP 7)	Microchip Technology Thailand (HQ) (MTAI)	Microchip Technology Thailand (Branch) (MMT)
Wire material	CuPdAu	CuPd	Au	CuPdAu	CuPd	Au	Au
Die attach material	ATB-125	AMK-06	3280	ATB-125	AMK-06	3280	3280
Molding compound material	G700	G700	G700	G700	G700	G700	G700
Lead frame material	C194	C194	C194	C194	C194	C194	C194

Impacts to Data Sheet:

None

**Change Impact:**

None

Reason for Change:

To improve productivity by qualifying MMT as an additional assembly site using gold (Au) bond wire.

Change Implementation Status:

In Progress

Estimated First Ship Date:

July 8, 2019 (date code: 1928)

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

Time Table Summary:

	May 2018						June 2019				July 2019				
Workweek	18	19	20	21	22		23	24	25	26	27	28	29	30	31
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:

May 15, 2018: Issued initial notification.

June 7, 2019: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on July 8, 2019. Updated affected CPN list as part of the update on the scope.

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-09FBAZ324_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)

ATSAMC20E15A-MNT
ATSAMC20E15A-MUT
ATSAMC20E16A-MNT
ATSAMC20E16A-MUT
ATSAMC20E17A-MNT
ATSAMC20E17A-MUT
ATSAMC20E18A-MNT
ATSAMC20E18A-MUT
ATSAMC21E15A-MNT
ATSAMC21E15A-MUT
ATSAMC21E15A-MUTDY
ATSAMC21E16A-MNT
ATSAMC21E16A-MUT
ATSAMC21E16A-MUTDY
ATSAMC21E17A-MNT
ATSAMC21E17A-MUT
ATSAMC21E18A-MNT
ATSAMC21E18A-MUT
ATSAMC21E18A-MUTDY
ATSAMD20E14A-MN
ATSAMD20E14A-MNT
ATSAMD20E14A-MU
ATSAMD20E14A-MUA1
ATSAMD20E14A-MUA2
ATSAMD20E14A-MUT
ATSAMD20E14A-MUTA1
ATSAMD20E14A-MUTA2
ATSAMD20E15A-MN
ATSAMD20E15A-MNT
ATSAMD20E15A-MU
ATSAMD20E15A-MUA1
ATSAMD20E15A-MUA2
ATSAMD20E15A-MUT
ATSAMD20E15A-MUTA1
ATSAMD20E15A-MUTA2
ATSAMD20E15A-MUTA4
ATSAMD20E16A-MN
ATSAMD20E16A-MNA2
ATSAMD20E16A-MNT
ATSAMD20E16A-MU
ATSAMD20E16A-MUA1
ATSAMD20E16A-MUA2
ATSAMD20E16A-MUT
ATSAMD20E16A-MUTA1
ATSAMD20E16A-MUTA2
ATSAMD20E17A-MN

ATSAMD20E17A-MNT
ATSAMD20E17A-MU
ATSAMD20E17A-MUA1
ATSAMD20E17A-MUA2
ATSAMD20E17A-MUT
ATSAMD20E17A-MUTA1
ATSAMD20E17A-MUTA2
ATSAMD20E17A-MUTA3
ATSAMD20E18A-MN
ATSAMD20E18A-MNT
ATSAMD20E18A-MU
ATSAMD20E18A-MUA1
ATSAMD20E18A-MUA2
ATSAMD20E18A-MUA4
ATSAMD20E18A-MUT
ATSAMD20E18A-MUTA1
ATSAMD20E18A-MUTA2
ATSAMD20E18A-MUTA3
ATSAMD20E18A-MUTA8
ATSAMD20E18A-MUTA9
ATSAMD20E18A-MUTB0
ATSAMD20E18A-MUTB1
ATSAMD20E18A-MUTB2
ATSAMD20E18A-MUTB3
ATSAMD21E15A-MFT
ATSAMD21E15B-MF
ATSAMD21E15B-MFT
ATSAMD21E15B-MFTA7
ATSAMD21E15B-MU
ATSAMD21E15B-MUT
ATSAMD21E15L-MF
ATSAMD21E15L-MFT
ATSAMD21E15L-MNT
ATSAMD21E16B-MF
ATSAMD21E16B-MFT
ATSAMD21E16B-MU
ATSAMD21E16B-MUT
ATSAMD21E16L-MF
ATSAMD21E16L-MFT
ATSAMD21E16L-MNT
ATSAMD21E16L-MNTA4
ATSAMD21E16L-MNTA7
ATSAMD21E16L-MNTB7
ATSAMD21E16L-MNTP01
ATSAMD21E17A-MF
ATSAMD21E17A-MFT
ATSAMD21E17A-MU
ATSAMD21E17A-MUA1
ATSAMD21E17A-MUT

ATSAMD21E17A-MUTA1

ATSAMD21E18A-MF

ATSAMD21E18A-MFT

ATSAMD21E18A-MU

ATSAMD21E18A-MUA1

ATSAMD21E18A-MUT

ATSAMD21E18A-MUTA1



QUALIFICATION REPORT
RELIABILITY LABORATORY SUMMARY

PCN #: KSRA-09FBAZ324

Date
February 14, 2019

**Qualification of MMT as an additional assembly site for
selected Atmel products available in 32L VQFN (5x5x1.0)
package using gold (Au) bond wire**



MICROCHIP Package Qualification Report

Purpose: Qualification of MMT as an additional assembly site for selected Atmel products available in 32L VQFN (5x5x1.0) package using gold (Au) bond wire

CCB No.: 3367

<u>Misc.</u>	CN	ES198474-26091
	Assembly site	MMT
	BD Number	BDM-001734 rev. C
	MP Code (MPC)	661P2TS8BA01
	Part Number (CPN)	ATSAMC21E18A-MU
	Qual ID	QTP3453 rev A and QTP3449 rev A
<u>Lead-Frame</u>	Paddle size	154x154 mils
	Material	C194
	Surface	Ag Selective (Island) Plating
	Treatment	BOT
	Process	Etched
	Lead-lock	Yes
	Part Number	10103205
	Lead Plating	Matte Tin
<u>Bond Wire</u>	Material	Au
<u>Die Attach</u>	Part Number	3280
	Conductive	Yes
<u>MC</u>	Part Number	G700
<u>PKG</u>	PKG Type	VQFN
	Pin/Ball Count	32
	PKG width/size	5x5x0.9mm
<u>Die</u>	Die Thickness	11 mils
	Die Size	135.3 x 124.5 mils
	Fab Process (site)	66.1K/MCSO



MICROCHIP

Package Qualification Report

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-190800001.000	U08D919033834.100	1821C8J
MMT-190700864.000	U08D919033834.100	1820C8K
MMT-190700999.000	U08D919033834.100	1820D3Q

Result



Pass



Fail

SAMC21 661P2 in 32L VQFN 5x5x1.0mm using 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) Electrical Test :+25°C System: Magnum	IPC/JEDEC C J-STD- 020E	45 units per lot	Lot 1 0/45	Pass	Refer to QTP3449
				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	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	Stress Condition: (Standard) + 130°C, 85%RH, 96 hrs. Bias Voltage: 5 Volts System: HIRAYAMA HASTEST PC-422R8 Electrical Test: +25°C, 125°C System: Magnum	JESD22- A110	84 per lot	Lot 1 0/84	Pass	Parts had been pre-conditioned at 260°C
				Lot 2 0/83	Pass	
				Lot 3 0/79	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	
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	

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 0/9084	Pass Pass Pass	
Bond Strength, 0 Hour	System: Dage Wire Pull (> 1.75 grams) Bond <i>Shear</i> (>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 MMT-190700864.000	JESD22B-102E	15 from lot 2 MMT190700864	0/15	Pass	