Product Change Notification - GBNG-05QUVX037

Date:
04 Mar 2019
Product Category:
8-bit Microcontrollers
Affected CPNs:

Notification subject:
CCB 3496 and 3496.001 Final Notice: Qualification of MMT as an additional assembly site for selected Atmel products of the 35.4K, 35.5K and 35.9K wafer technologies available in 64L TQFP (14x14x1.0mm) and 100L TQFP (14x14x1.0mm) packages.
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 the 35.4K, 35.5K and 35.9K wafer technologies available in 64L TQFP (14x14x1.0mm) and 100L TQFP (14x14x1.0mm) packages.
Pre Change:
Assembled in ASE using Au, PdCu or CuPdAu wire, CRM-1076WA or 2288A die attach, G631H mold compound and C7025 lead frame material or assembled in LPI using Au or CuPdAu wire, CRM-1033BF die attach, G700 mold compound and C194 lead frame material or assembled at ANAP using AuPd or PdCu wire, 3200 or AP4200 die attach, G700, G770Y or G631HQ mold compound and C194 lead frame material.
Post Change:
Assembled in ASE using Au, PdCu or CuPdAu wire, CRM-1076WA or 2288A die attach, G631H mold compound and C7025 lead frame material or assembled in LPI using Au or CuPdAu wire, CRM-1033BF die attach, G700 mold compound and C194 lead frame material or assembled at ANAP using AuPd or PdCu wire, 3200 or AP4200 die attach, G700, G770Y or G631HQ mold compound and C194 lead frame material or assembled in MMT using Au wire, 3280 die attach, G700 mold compound and C194 lead frame material.
Pre and Post Change Summary:

	Pre Change			Post Change			
Assembly Site	ASE Inc. Taiwan (ASE)	Lingsen Precision Industries, LTD. (LPI)	Amkor Technology Philippine (P1/P2), INC. (ANAP)	ASE Inc. Taiwan (ASE)	Lingsen Precision Industries, LTD. (LPI)	Amkor Technology Philippine (P1/P2), INC. (ANAP)*	Microchip Technology Thailan

															d (Branch) (MMT)
Wire material	Au	PdCu	CuPd Au	Au	CuPd Au	AuPd	PdCu	Au	PdCu	CuPd Au	Au	CuPd Au	AuPd	PdCu	Au
Die attach material	2288A		CRM-1076WA	CRM-1033BF		3230	AP4200	2288A*		CRM-1076WA	CRM-1033BF		3230	AP4200	3280
Molding compound material	G631H			G700		G700	G770Y	G631HQ	G631H		G700	G700L	G770Y	G631HQ	G700
Lead frame material	C7025			C194		C194			C7025		C194		C194		C194
MSL Classification	MSL 3			MSL 3		MSL 3			MSL 3		MSL 3		MSL 3		MSL 3

Impacts to Data Sheet:
None

Change Impact:
None

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

Change Implementation Status:
In Progress

Estimated First Ship Date:
For 100L TQFP package: January 19, 2019 (date code: 1903)
For 64L TQFP package: March 30, 2019 (date code: 1913)
NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

	August 2018					->	**December 2018**					**January 2019**					**February 2019**				**March 2019**			
Workweek	31	32	33	34	35		48	49	50	51	52	01	02	03	04	05	06	07	08	09	10	11	12	13
Initial PCN Issue Date		X																						
Qual Report Availability										X														
Final PCN Issue Date										X														
Estimated Implementation Date														X										X*

***For 64L TQFP package**

Method to Identify Change:
Traceability code

Qualification Report:
Please open the attachments included with this PCN labeled as PCN_#_Qual Report.
Revision History:
August 09, 2018: Issued initial notification.
December 19, 2018: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on January 19, 2019.
March 4, 2019: Re-issued final notification to update the subject and description because of the update in scope to include 64L TQFP package. Updated the affected CPN list in accordance with the update to the scope. Updated the pre and post change summary table MSL classification for MMT site from MSL 1 and 2 to MSL 3. Updated the pre and post change to add ANAP assembly site which is applicable for 64L TQFP package.
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_GBNG-05QUVX037_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.

Affected Catalog Part Numbers (CPN)

AT90CAN128-16AU
AT90CAN128-16AUR
AT90CAN32-16AU
AT90CAN32-16AUR
AT90CAN64-16AU
AT90CAN64-16AUR
AT90USB1286-AU
AT90USB1286-AUR
AT90USB1287-AU
AT90USB1287-AUR
AT90USB646-AU
AT90USB646-AUR
AT90USB647-AU
AT90USB647-AUR
ATHON169A-AUR
ATMEGA1280-16AU
ATMEGA1280-16AU-HCM
ATMEGA1280-16AUR
ATMEGA1280V-8AU
ATMEGA1280V-8AUR
ATMEGA1281-16AU
ATMEGA1281-16AUR
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ATMEGA128-16ANR
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ATMEGA128-16AURA3
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ATXMEGA64D3-AUA1

ATXMEGA64D3-AUA2

ATXMEGA64D3-AUA3

ATXMEGA64D3-AUA4

ATXMEGA64D3-AUR

ATXMEGA64D3-AURA0

ATXMEGA64D3-AURA2

ATXMEGA64D3-AURA3

ATXMEGA64D3-AURA4

ATXMEGA64D3-AURA6

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: GBNG-05QUVX037

Date:
December 11, 2018

Qualification of MMT as an additional assembly site for selected Atmel products of the 35.4K, 35.5K and 35.9K wafer technologies available in 100L TQFP (14x14x1.0mm) package. The selected Atmel products of the 35.4K, 35.5K and 35.9K wafer technologies available in 64L TQFP (14x14x1.0mm) package will qualify by similarity (QBS).

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PACKAGE QUALIFICATION REPORT

Purpose: **Qualification of MMT as an additional assembly site for selected Atmel products of the 35.4K, 35.5K and 35.9K wafer technologies available in 100L TQFP (14x14x1.0mm) package. The selected Atmel products of the 35.4K, 35.5K and 35.9K wafer technologies available in 64L TQFP (14x14x1.0mm) package will qualify by similarity (QBS).**

CCB	3496 and 3496.001
CN	ES243709
QUAL ID	Q18177 Rev. A
MP CODE	355E37E5XA01
Part No.	ATMEGA2560-16AU
Bonding No.	BDM-001881 REV. C
Package	
Type	100L TQFP
Package size	14x14x1.0 mm
Die thickness	11 mils
Die size	261.0x213.0 mils
Lead Frame	
Paddle size	280x280 mils
Material	C7025
Surface	Bare Cu
Process	Etched
Lead Lock	No
Part Number	10110005
Treatment	BOT
Material	
Epoxy	3280
Wire	Au wire
Mold Compound	G700HA
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-192701602.000	MCS0519217904.120	1840576
MMT-192701603.000	MCS0519217904.120	1840577
MMT-192701604.000	MCS0519217904.120	1840578

Result [X] Pass [ ] Fail [ ] _____

100L TQFP 14x14x1.0mm assembled by MMT pass reliability test per QCI-39000.This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 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 3)	30°C/ 60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020E)	IPC/JEDEC J-STD-020E	135	0/135	Pass	

<u>Precondition Prior Perform Reliability Tests</u> **(At MSL Level 3)**	**Electrical Test :**+25°C and 85°C System: NEX TEST GT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test :+25°C and 85°C System: NEX TEST GT			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 85°C System: NEX TEST GT		231(0)	0/231	Pass	77 units / lot
	Bond Strength:		15 (0)	0/15	Pass	
	Wire Pull (> 2.5 grams)					
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: NEX TEST GT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test:+25°C and 85°C System: NEX TEST GT		231(0)	0/231	Pass	77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test :+25°C and 85°C System: NEX TEST GT		45(0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Solderability **Temp 215°C**	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 22 0/22	Pass	
Solderability **Temp 245°C**	**Steam Aging:** 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	
Wire sweep	Wire sweep Inspection 15 Wires / lot from 3 lots	-	45(0) Wires	0/45	Pass	
Physical **Dimensions**	Physical Dimension, 10 units/lot from 3 lots	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength **Data Assembly**	Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	M2011 JESD22-B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	