Product Change Notification - GBNG-30UKAP366

Date:

01 Feb 2020

Product Category:

32-bit Microcontrollers

Affected CPNs:

Notification subject:

CCB 3802 Final Notice: Qualification of MTAI as an additional assembly site for selected Atmel products of the 58.85K wafer technology available in 48L TQFP (7x7x1 mm) 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 MTAI as an additional assembly site for selected Atmel products of the 58.85K wafer technology available in 48L TQFP (7x7x1 mm) package.

Pre Change:

Assembled at ANAP assembly site using 3230 die attach and C194 lead-frame material.

Post Change:

Assembled at ANAP assembly site using 3230 die attach and C194 lead-frame material or assembled at MTAI assembly site using 3280 die attach and C7025 lead frame material.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	Amkor Technology Philippine (ANAP)	Amkor Technology Philippine (ANAP)	Microchip Technology Thailand (HQ) (MTAI)
Wire material	Au	Au	Au
Die attach material	3230	3230	3280
Molding compound material	G700	G700	G700
Lead frame material	C194	C194	C7025

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

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

Change Implementation Status:

In Progress

Estimated First Ship Date:

March 30, 2020 (date code: 2014)

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

Time Table Summary:

	September 2019					->	February 2020					March 2020				
Workweek	36	37	38	39	40		05	06	07	08	09	10	11	12	13	14
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:
September 16, 2019: Issued initial notification.
February 1, 2020: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on March 30, 2020.
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-30UKAP366_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.

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: GBNG-30UKAP366

Date

December 23, 2019

Qualification of MTAI as an additional assembly site for selected Atmel products of the 58.85K wafer technology available in 48L TQFP (7x7x1 mm) package.

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Package Qualification Report

Purpose: Qualification of MTAI as an additional assembly site for selected Atmel products of the 58.85K wafer technology available in 48L TQFP (7x7x1 mm) package.

Misc.	**Assembly site**	MTAI
	BD Number	BDM-002121 rev.A
	MP Code (MPC)	58U397Y8XC07
	Part Number (CPN)	AT32UC3B1128-AUT
	QUAL ID.	QTP3801 Rev. A
	CCB No.	3802
Lead-Frame	**Paddle size**	200 x 200 mils
	Material	C7025
	DAP Surface Prep	Bare Copper
	Treatment	Yes
	Process	Stamped
	Lead-lock	No
	Part Number	10104805
	Lead Plating	Matte Tin
	Strip Size	70 x 218 mm
	Strip Density	70 units/strip
Bond Wire	**Material**	Au
Die Attach	**Part Number**	3280
	Conductive	Yes
MC	**Part Number**	G700HA
PKG	**PKG Type**	TQFP
	Pin/Ball Count	48
	PKG width/size	7x7x1.0 mm
	MSL	MSL1/260

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Package Qualification Report

Manufacturing Information

Assembly Lot No.
MTAI200502952.000
MTAI200502956.000
MTAI200502953.000

Result ☑ Pass ☐ Fail ☐ ____________________

58U39 MCT32 on 48L TQFP 7x7mm assembled at MTAI 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/JEDE	45 units per lot	Lot 1 0/45 Lot 2 0/45 Lot 3 0/45	Pass Pass 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	231 units per lot	Lot 1 0/231 Lot 2 0/231 Lot 3 0/231	Pass Pass Pass	Good Devices

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED HAST	**Stress Condition:** (Standard) + 130°C, 85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C System: Magnum	JESD22-A118	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
HAST	**Stress Condition:** (Standard) + 130°C, 85%RH, 96 hrs. VOLTS=5.75V System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 25°C /130°C System: Magnum	JESD22-A110	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Result is based from CCB3871 using 58U94 in 100L TQFP 14x14.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Temp Cycle	**Stress Condition:** (Standard) -65°C to +150°C, 500 Cycles System : Votsch VTS^{2}7012 **Electrical Test:** 90°C System: Magnum	JESD22-A104	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
	Bond Strength: Wire Pull (> 1.75 grams) Bond *Shear (>12.6 grams)* System: Dage		5 units per lot	Lot 1, 0/5 Lot 2, 0/5 Lot 3, 0/5	Pass Pass Pass	
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 500 hrs System: HERAEUS **Electrical Test:** 25°C /90°C System: Magnum	JESD22-A103	45 units per lot	Lot 1 0/45 Lot 2 0/45 Lot 3 0/45	Pass Pass Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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 Dimension	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	**Bake:** Temp 155°C,4Hrs System: Oven Solder Bath: Temp.245°C Solder material: SAC305 Visual Inspection: External Visual Inspection	J-STD-002D	22 units from 1 lot	0/22	Pass	

Affected Catalog Part Numbers (CPN)

AT32UC3B1128-AUT
AT32UC3B1256-AUT
AT32UC3B164-AUT
AT32UC3B1128-AUR
AT32UC3B1256-AUR
AT32UC3B164-AUR
AT32UC3L0128-AUT
AT32UC3L0256-AUT
ATUC128L4U-AUT
ATUC256L4U-AUT
ATUC64L4U-AUT
AT32UC3L0128-AUR
AT32UC3L0256-AUR
ATUC128L4U-AUR
ATUC256L4U-AUR
ATUC64L4U-AUR
ATUC64D4-AUT
ATUC128D4-AUT
ATUC64D4-AUR