



Product Change Notification / GBNG-03JWKQ486

Date:

05-Nov-2020

Product Category:

32-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4443 Initial Notice: Qualification of G631HQ mold compound material for selected Atmel AT32UC3Axxx and AT32UC3Cxxx device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

Affected CPNs:

[GBNG-03JWKQ486_Affected_CPN_11052020.pdf](#)

[GBNG-03JWKQ486_Affected_CPN_11052020.csv](#)

Notification Text:

PCN Status: Initial 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 G631HQ mold compound material for selected Atmel AT32UC3Axxx and AT32UC3Cxxx device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

Pre Change:

Using G700L mold compound material with 276x276 mils or 236x236 mils lead frame paddle size.

Post Change:

Using G631HQ mold compound material with 276x276 mils lead frame paddle size.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Amkor Technology Philippine (P1/P2), INC. / ANAP	Amkor Technology Philippine (P1/P2), INC. / ANAP
Wire material	AuPd	AuPd
Die attach material	3230	3230
Molding compound material	G700L	G631HQ
Lead frame material	C194	C194
Lead frame paddle size	276x276 mils or 236x236 mils	276x276 mils
Lead frame design	See attached pre and post change comparison	

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve manufacturability by qualifying G631HQ mold compound material with 276x276 mils lead frame paddle size at ANAP assembly site.

Change Implementation Status:

In Progress

Estimated Qualification Completion Date:

January 2021

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:

	November 2020					→	January 2021				
	45	46	47	48	49		01	02	03	04	05
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:

November 5, 2020: 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_GBNG-03JWKQ486_Pre and Post Change Summary.pdf](#)
- [PCN_GBNG-03JWKQ486_Qual_Plan.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)

AT32UC3A0512-ALTTA
AT32UC3A0512-ALTRA
AT32UC3A3128-ALUT
AT32UC3A3128S-ALUT
AT32UC3A3256-ALUT
AT32UC3A3256S-ALUT
AT32UC3A364-ALUT
AT32UC3A364S-ALUT
AT32UC3A3256-ALUTA1
AT32UC3A3256AU-ALUTA1
AT32UC3A3128-ALUR
AT32UC3A3128S-ALUR
AT32UC3A3256-ALUR
AT32UC3A3256S-ALUR
AT32UC3A364-ALUR
AT32UC3A364S-ALUR
AT32UC3A0512-ALUT
AT32UC3A0512-ALUR
AT32UC3C0512C-ALZT
AT32UC3C0128C-ALUT
AT32UC3C0256C-ALUT
AT32UC3C0512C-ALUT
AT32UC3C064C-ALUT
AT32UC3C0128C-ALUR
AT32UC3C064C-ALUR
AT32UC3C0512C-ALUR
AT32UC3C0256C-ALUR
AT32UC3C0512C-ALZR
AT32UC3A0128-ALUT
AT32UC3A0256-ALUT
AT32UC3A0128-ALUR
AT32UC3A0256-ALUR

PCN #: GBNG-03JWKQ486

**PRE AND POST CHANGE SUMMARY
CCB 4443**



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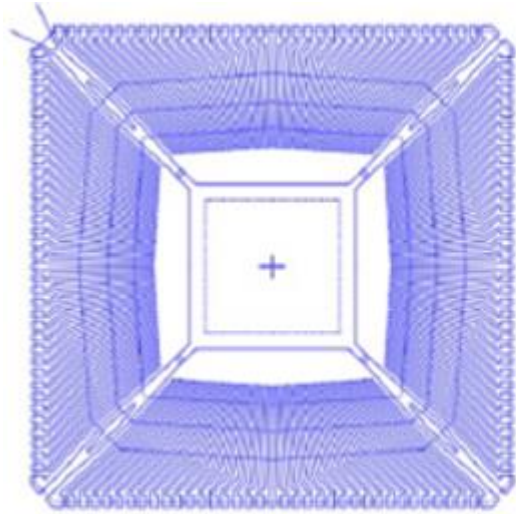


SMART | CONNECTED | SECURE

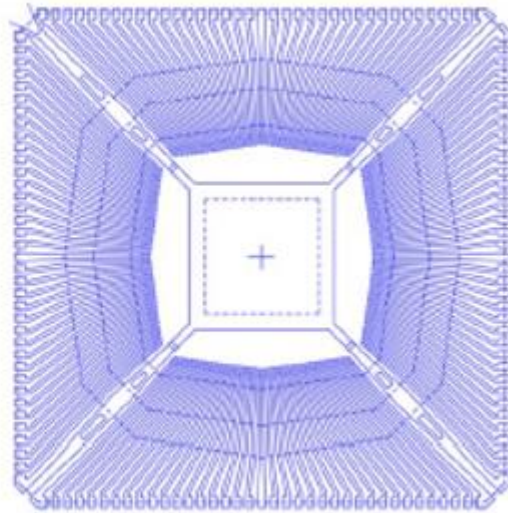
Lead frame Comparison

Pre Change

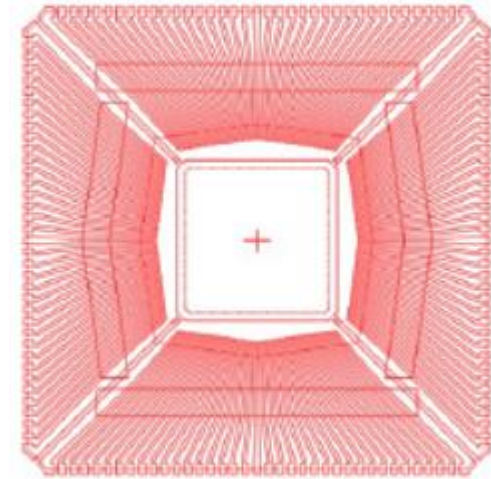
Post Change



276x276 mils



236x236 mils



Strip Density	HDLF High Density Lead frame	HDLF High Density Lead frame
LF Paddle Sie	276x276 mils	236x236 mils
DAP Surface Prep	Double Ring Ag	Double Ring Ag
Backside Dimple	Yes	Yes

Strip Density	UDLF Ultra Density Lead frame
LF Paddle Sie	276x276 mils
DAP Surface Prep	Double Ring Ag
Backside Dimple	No



QUALIFICATION PLAN SUMMARY

PCN #: GBNG-03JWKQ486

**Date:
October 29, 2020**

Qualification of G631HQ mold compound material for selected Atmel AT32UC3Axxx and AT32UC3Cxxx device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site. This is Q100 Grade 1 qualification.

Purpose: Qualification of G631HQ mold compound material for selected Atmel AT32UC3Axxx and AT32UC3Cxxx device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site. This is Q100 Grade 1 qualification.

<u>Misc.</u>	Assembly site	ANAP
	BD Number	TBD
	MP Code (MPC)	58U94YH8XC02
	Part Number (CPN)	AT32UC3C0512C-ALZR
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	T/R
	Base Quantity Multiple (BQM)	800 units
	Reliability Site	MPHIL
	CCB No.	4443
<u>Lead-Frame</u>	Paddle size	276x276 mils
	Material	C194
	DAP Surface Prep	Double Ring Ag
	Treatment	None
	Process	STAMPED
	Lead-lock	Yes
	Part Number	101384548
	Lead Plating	Matte Tin
	Strip Size	Confidential
	Strip Density	UDLF
<u>Bond Wire</u>	Material	AuPd
<u>Die Attach</u>	Part Number	3230
	Conductive	Yes
<u>MC</u>	Part Number	G631HQ
<u>PKG</u>	PKG Type	LQFP
	Pin/Ball Count	144
	PKG width/size	20x20x1.4mm

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	ATE Test Site	REL Test Site	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		MPHIL	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0 fails after TC	5		ANAP	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5		5		ANAP	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30		5		ANAP	
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5		ANAP	
HTSL (High Temp Storage Life)	JESD22-A103 +125°C, +150°C or +175°C	Grade 1: 500 hrs (+175°C)	Grade 1: +25°C, +85°C, +130°C	45	5	1	50	0	21 - 83	MPHIL	MPHIL	Spares should be properly identified.

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	ATE Test Site	REL Test Site	Special Instructions
Preconditioning - Required for surface mount devices	J-STD-020JESD22-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, +85°C, +130°C	231+ 45 (for devices requiring PTC)	15+ 5 (for devices requiring PTC)	3	738+ 50 (for devices requiring PTC)	0	15	MPHIL	MPHIL	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test. 45 parts from one lot to be used for PTC test (for devices requiring PTC).
HAST	JESD22-A101 or A110 +130°C/85% RH for 96 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C, +85°C, +130°C	77	5	3	246	0	10 - 14	MPHIL	MPHIL	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 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C	77	5	3	246	0	10	MPHIL	MPHIL	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	Grade 1: 500 cycles (-65°C to 150°C)	Grade 1: +85°C, +130°C	77	5	3	246	0	15 - 60	MPHIL	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.