



Product Change Notification / RMES-05VLTL542

Date:

09-Nov-2020

Product Category:

32-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4444 Initial Notice: Qualification of G631HQ mold compound material for selected products available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

Affected CPNs:

[RMES-05VLTL542_Affected_CPN_11092020.pdf](#)
[RMES-05VLTL542_Affected_CPN_11092020.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 products available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

Pre Change:

Using G700L molding compound

Post Change:

Using G631HQ molding compound

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	Au	Au
Die attach material	3230	3230
Mold compound material	G700L	G631HQ
Lead frame material	C194	C194
Lead frame design	No dimensional change See attached file	

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying G631HQ molding compound material

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				
	4 5	4 6	4 7	4 8	4 9		0 1	0 2	0 3	0 4	05
Workweek											
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 09, 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_RMES-05VLTL542_Pre and Post Change Summary.pdf](#)
[PCN_RMES-05VLTL542_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)

PIC32MZ1024ECG144-I/PLDD9
PIC32MZ1024ECG144-I/PL
PIC32MZ2048ECG144-I/PL
PIC32MZ1024ECH144-I/PL
PIC32MZ2048ECH144-I/PL
PIC32MZ1024ECM144-I/PL
PIC32MZ2048ECM144-I/PL
PIC32MZ1024ECG144T-I/PLDD9
PIC32MZ1024ECG144T-I/PL
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PIC32MZ2048ECM144T-I/PL
PIC32MZ0512EFE144-E/PL
PIC32MZ0512EFF144-E/PL
PIC32MZ0512EFK144-E/PL
PIC32MZ1024EFE144-E/PL
PIC32MZ1024EFF144-E/PL
PIC32MZ1024EFG144-E/PL
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PIC32MZ1024EFK144-E/PL
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PIC32MZ2048EFH144-E/PL
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PIC32MZ0512EFK144-I/PL
PIC32MZ1024EFE144-I/PL
PIC32MZ1024EFF144-I/PL
PIC32MZ1024EFG144-I/PLG22
PIC32MZ1024EFG144-I/PL
PIC32MZ1024EFH144-I/PL
PIC32MZ1024EFK144-I/PL
PIC32MZ1024EFM144-I/PL
PIC32MZ2048EFG144-I/PL
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PIC32MZ2048EFG144T-E/PL
PIC32MZ2048EFH144T-E/PL
PIC32MZ2048EFM144T-E/PL

CCB 4444
Pre and Post Change Summary
PCN #: RMES-05VLT542



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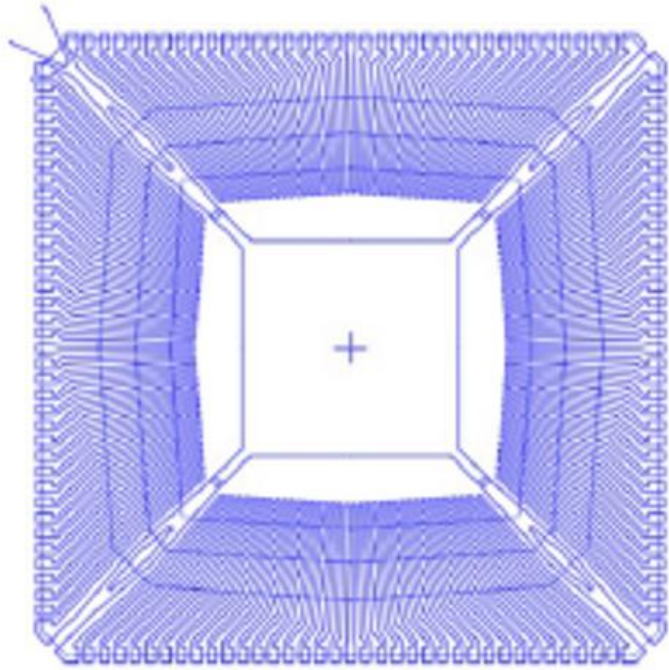
Qualification of G631HQ mold compound material selected products available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.



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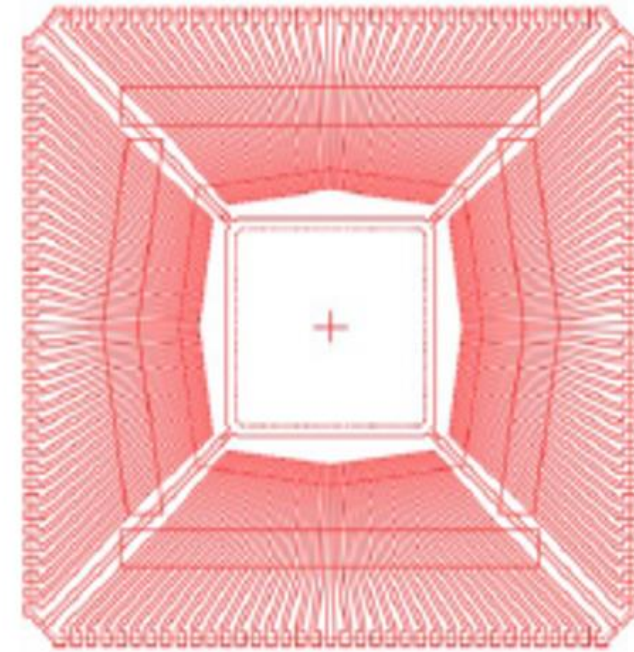
Lead frame Comparison

Pre Change



Strip Density	HDLF High Density Lead frame
DAP Surface Prep	Ring Ag
Backside Dimple	Yes

Post Change



Strip Density	UDLF Ultra Density Lead frame
DAP Surface Prep	Double Ring Ag
Backside Dimple	No



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QUALIFICATION PLAN SUMMARY

PCN #: RMES-05VLTL542

Date:

October 29, 2020

Qualification of G631HQ mold compound material for selected products available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

Purpose: _____ **Qualification of G631HQ mold compound material for selected products available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.**

<u>Misc.</u>	Assembly site	ANAP
	BD Number	TBD
	MP Code (MPC)	WACD17H8XMXF
	Part Number (CPN)	PIC32MZ2048EFH144-I/PL
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	Tray
	Base Quantity Multiple (BQM)	60 units
	Reliability Site	MTAI
	CCB No.	4444
<u>Lead-Frame</u>	Paddle size	276x276 mils
	Material	C194
	Manufacturer	MHT
	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	Au
<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	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 hour 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		MTAI	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.
Backward Solderability	J-STD-002D ; Perform 8 hours steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.	22	5	1	27	> 95% lead coverage	5		MTAI	
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	0	5		ANAP	30 bonds from a min. 5 devices.
Wire Sweep									ANAP	Required for any reduction in wire bond thickness.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5		ANAP	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5		ANAP	
Preconditioning - Required for surface mount devices	+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; Electrical test pre and post stress at +25°C. MSL3@ 260C	231	15	3	738	0	15	MTAI	MTAI	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.

Test Name	Conditions	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
HAST	+130°C/85% RH for 96 hours Electrical test pre and post stress at +25°C and hot temp.	77	5	3	246	0	10	MTAI	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning
UHAST	+130°C/85% RH for 96 hrs Electrical test pre and post stress at +25°C	77	5	3	246	0	10	MTAI	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	MTAI	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.