



Product Change Notification / RMES-05 VLTL542

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**Date:**

21-May-2021

**Product Category:**

32-bit Microcontrollers

**PCN Type:**

Manufacturing Change

**Notification Subject:**

CCB 4444 Final Notice: Qualification of G631HQ mold compound material for selected PIC32MZ1024ECx144, PIC32MZ2048ECx144, PIC32MZ0512EFx144, PIC32MZ1024EFx144, and PIC32MZ2048EFx144 device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

**Affected CPNs:**

[RMES-05 VLTL542\\_Affected\\_CPN\\_05212021.pdf](#)

[RMES-05 VLTL542\\_Affected\\_CPN\\_05212021.csv](#)

**Notification Text:**

**PCN Status:** Final notification

**PCN Type:** Manufacturing Change

**Microchip Parts Affected:** Please open one of the files found in the Affected CPNs section.

**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 PIC32MZ1024ECx144, PIC32MZ2048ECx144, PIC32MZ0512EFx144, PIC32MZ1024EFx144, and PIC32MZ2048EFx144 device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

**Pre Change:** Using G700L molding compound

**Post Change:**



**Method to Identify Change:** Traceability code

**Qualification Report:** Please open the attachments included with this PCN labeled as PCN\_#\_Qual Report.

**Revision History:** **November 09, 2020:** Issued initial notification. **May 21, 2021:** Issued final notification. Attached the qualification report. Provided estimated first ship date to be on June 30, 2021. Updated the subject and description to include the affected device families.

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-05 VLTL542\\_Qual\\_Report.pdf](#)

[PCN\\_RMES-05 VLTL542\\_Pre and Post Change Summary.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

## **Terms and Conditions:**

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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)

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  
PIC32MZ2048ECG144T-I/PL  
PIC32MZ1024ECH144T-I/PL  
PIC32MZ2048ECH144T-I/PL  
PIC32MZ1024ECM144T-I/PL  
PIC32MZ2048ECM144T-I/PL  
PIC32MZ0512EFE144-E/PL  
PIC32MZ0512EFF144-E/PL  
PIC32MZ0512EFK144-E/PL  
PIC32MZ1024EFE144-E/PL  
PIC32MZ1024EFF144-E/PL  
PIC32MZ1024EFG144-E/PL  
PIC32MZ1024EFH144-E/PL  
PIC32MZ1024EFK144-E/PL  
PIC32MZ1024EFM144-E/PL  
PIC32MZ2048EFG144-E/PL  
PIC32MZ2048EFH144-E/PL  
PIC32MZ2048EFG144-E/PLN01  
PIC32MZ2048EFM144-E/PL  
PIC32MZ0512EFE144-I/PL  
PIC32MZ0512EFF144-I/PL  
PIC32MZ2048EFH144-250I/PL  
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  
PIC32MZ2048EFH144-I/PLM21  
PIC32MZ2048EFH144-I/PL  
PIC32MZ2048EFM144-I/PL  
PIC32MZ0512EFE144T-I/PL  
PIC32MZ0512EFF144T-I/PL  
PIC32MZ2048EFH144T-250I/PL  
PIC32MZ0512EFK144T-I/PL

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RMES-05VLT542 - CCB 4444 Final Notice: Qualification of G631HQ mold compound material for selected PIC32MZ1024ECx144, PIC32MZ2048ECx144, PIC32MZ0512EFx144, PIC32MZ1024EFx144, and PIC32MZ2048EFx144 device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.

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PIC32MZ1024EFE144T-I/PL  
PIC32MZ1024EFF144T-I/PL  
PIC32MZ1024EFG144T-I/PL  
PIC32MZ1024EFH144T-I/PL  
PIC32MZ1024EFK144T-I/PL  
PIC32MZ1024EFM144T-I/PL  
PIC32MZ2048EFG144T-I/PLL21  
PIC32MZ2048EFG144T-I/PL  
PIC32MZ2048EFH144T-I/PL  
PIC32MZ2048EFM144T-I/PL  
PIC32MZ0512EFE144T-E/PL  
PIC32MZ0512EFF144T-E/PL  
PIC32MZ0512EFK144T-E/PL  
PIC32MZ1024EFE144T-E/PL  
PIC32MZ1024EFF144T-E/PL  
PIC32MZ1024EFG144T-E/PL  
PIC32MZ1024EFH144T-E/PL  
PIC32MZ1024EFK144T-E/PL  
PIC32MZ1024EFM144T-E/PL  
PIC32MZ2048EFG144T-E/PL  
PIC32MZ2048EFH144T-E/PL  
PIC32MZ2048EFM144T-E/PL

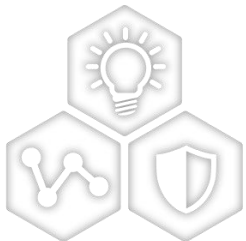
**CCB 4444**  
**Pre and Post Change Summary**  
**PCN #: RMES-05VLT542**



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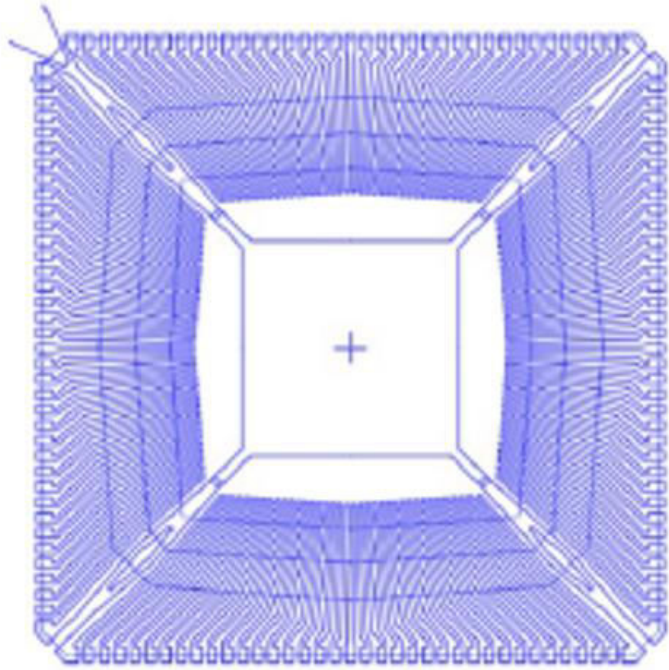
**Qualification of G631HQ mold compound material for selected  
PIC32MZ1024ECx144, PIC32MZ2048ECx144, PIC32MZ0512EFx144,  
PIC32MZ1024EFx144, and PIC32MZ2048EFx144 device families available in  
144L LQFP (20x20x1.4mm) package at ANAP assembly site.**



SMART | CONNECTED | SECURE

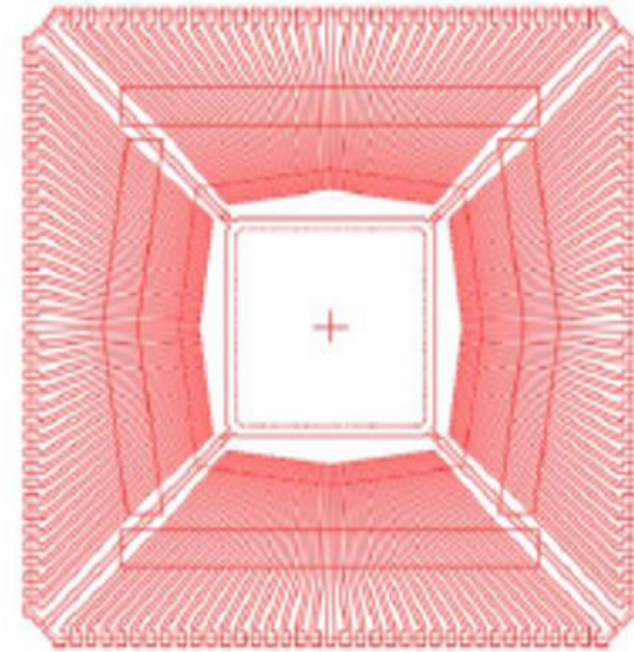
# Lead frame Comparison

## 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



**MICROCHIP**

**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN#: RMES-05VLTL542**

**Date**  
**May 07, 2021**

**Qualification of G631HQ mold compound material for selected PIC32MZ1024ECx144, PIC32MZ2048ECx144, PIC32MZ0512EFx144, PIC32MZ1024EFx144, and PIC32MZ2048EFx144 device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.**





## MICROCHIP PACKAGE QUALIFICATION REPORT

<b>Purpose</b>	Qualification of G631HQ mold compound material for selected PIC32MZ1024ECx144, PIC32MZ2048ECx144, PIC32MZ0512EFx144, PIC32MZ1024EFx144, and PIC32MZ2048EFx144 device families available in 144L LQFP (20x20x1.4mm) package at ANAP assembly site.
<b>CN</b>	ES349583
<b>QUAL ID</b>	R2100247
<b>MP CODE</b>	WACD17H8XMXF
<b>Part No.</b>	PIC32MZ2048EFH144-I/PL
<b>Bonding No.</b>	BDM-002762 Rev. A
<b>Qual ID</b>	R2100247 rev. A
<b>CCB No.</b>	4444
<b><u>Package</u></b>	
<b>Type</b>	144L LQFP
<b>Package size</b>	20 x 20 x 1.4 mm
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	276 x 276 mils
<b>Material</b>	C194
<b>Surface</b>	Double Ring Ag
<b>Process</b>	STAMPED
<b>Lead Lock</b>	Yes
<b>Part Number</b>	101384548
<b>Treatment</b>	None
<b><u>Material</u></b>	
<b>Epoxy</b>	3230
<b>Wire</b>	Au wire
<b>Mold Compound</b>	G631HQ
<b>Plating Composition</b>	Matte Sn



## MICROCHIP PACKAGE QUALIFICATION REPORT

### Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
ANAP213400085.000	TC14921236281.210	2047M01
ANAP213400086.000	TC14921236281.210	2047M0M
ANAP213500001.000	TC14921236281.210	2048M1E

### Result

Pass     Fail     \_\_\_\_\_

144L LQFP (20x20x1.4 mm) assembled by ANAP 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
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 3)	<p><b>Electrical Test:</b> +25°C and 85°C System: J750</p> <p>Bake 150°C, 24 hrs System: CHINEE</p> <p>30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH</p> <p>3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243</p> <p><b>Electrical Test:</b> +25°C and 85°C System: J750</p>	<p>JESD22- A113</p> <p>JIP/ IPC/JEDEC J-STD-020E</p>	<p>693(0)</p>	<p>693</p> <p>693</p> <p>693</p> <p>693</p> <p>0/693</p>	<p>Pass</p>	<p>Good Devices</p>

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22- A104		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +85°C System: J750		231(0)	0/231	Pass	77 units / lot
	<b>Bond Strength:</b> Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
			15 (0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C System: J750		231(0)	0/231	Pass	77 units / lot
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 3.6 Volts System: HAST 6000X	JESD22- A110		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C and 85°C System: J750		231(0)	0/231	Pass	77 units / lot

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	<b>Electrical Test:</b> +25°C and 85°C System: J750		45(0)	0/45	Pass	
<b>Solderability Temp 215°C</b>	<b>Steam Aging:</b> 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	
<b>Solderability Temp 245°C</b>	<b>Steam Aging:</b> 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	
<b>Wire sweep</b>	Wire sweep Inspection 15 Wires / lot	-	45(0)  Wires	0/45	Pass	
<b>Physical Dimensions</b>	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 2.30 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (> 13.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	