Product Change Notification / CENO-03BMPH839

Date:

05-Apr-2023

Product Category:

Wireless Modules

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6237 Final Notice: Qualification of MMT as an additional assembly site for AT86RF233-ZF, AT86RF233-ZU, AT86RF233-ZUR and AT86RF233-ZFR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package.

Affected CPNs:

CENO-03BMPH839_Affected_CPN_04052023.pdf
CENO-03BMPH839_Affected_CPN_04052023.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 MMT as an additional assembly site for AT86RF233-ZF, AT86RF233-ZU, AT86RF233-ZUR and AT86RF233-ZFR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	Amkor Technology Philippines (P3/P4), INC. (ATP7)	Amkor Technology Philippines (P3/P4), INC. (ATP7)	Microchip Technology Thailand (Branch) (MMT)
Wire Material	PdCu	PdCu	Au
Die Attach Material	AMK-06	AMK-06	3280
Molding Compound Material	G700Y	G700Y	G700LTD
Lead-Frame Material	C194	C194	C194
Lead-Frame Paddle Size	150x150	150x150	150x150
Lead-Lock	No	No	Yes
	See Pre and Post Change Summary for Comparison		
DAP Surface Prep	Bare Cu	Bare Cu	Bare Cu

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying MMT as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: April 28, 2023 (date code: 2317)

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

Time Table Summary:

	April 2023				
Workweek	14	15	16	17	18
Qual Report Availability	x				
Final PCN Issue Date	x				
Estimated Implementation				x	

Date					

Method to Identify Change: Traceability code

Qualification Report: Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History: April 5, 2023: Issued final 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_CENO-03BMPH839_Qual Report.pdf
PCN_CENO-03BMPH839_Pre and Post Change Summary.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.

CCB 6237
Pre and Post Change Summary
PCN #: CENO-03BMPH839

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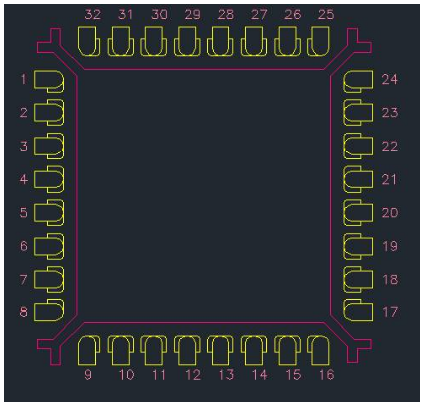
LEAD FRAME COMPARISON

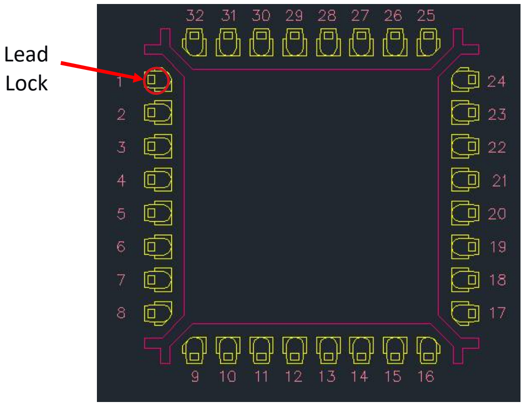
ATP7



Note: Not to scale

Wire Material	**PdCu**
Die Attach Material	**AMK-06**
Molding Compound Material	**G700Y**
Lead-Frame Material	**C194**
Lead-lock	**No**

MMT


Lead Lock

Note: Not to scale

Wire Material	**Au**
Die Attach Material	**3280**
Molding Compound Material	**G700LTD**
Lead-Frame Material	**C194**
Lead-lock	**Yes**

Note: Mold compound material fills the lead-lock hole, which provides improved protection against moisture penetration along the edge of the leads (pins) of the package.

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: CENO-03BMPH839

Date:
August 9, 2019

Qualification of MMT as an additional assembly site for AT86RF233-ZF, AT86RF233-ZU, AT86RF233-ZUR and AT86RF233-ZFR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package. This is a qualification by similarity (QBS).

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Package Qualification Report

Purpose: Qualification of MMT as an additional assembly site for AT86RF233-ZF, AT86RF233-ZU, AT86RF233-ZUR and AT86RF233-ZFR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package. This is a qualification by similarity (QBS).

Misc.	Assembly site	MMT
	BD Number	BDM-001984/A
	MP Code (MPC)	58Z547SMBC01
	Part Number (CPN)	ATSAM4LS8AA-MU
	Qual ID	QTP3720 Rev. A
	CCB	6237 and 3654
Lead-Frame	Paddle size	228x228 mils
	Material	C194
	DAP Surface Prep	Bare Cu
	Treatment	Roughened Cu
	Process	Etched
	Part Number	10104801
	Lead Plating	Matte tin
	Strip Size	70x250
	Strip Density	240
Bond Wire	Material	Au
Die Attach	Part Number	3280
	Conductive	Yes
MC	Part Number	G700LTD
PKG	PKG Type	VQFN
	Pin/Ball Count	48L
	PKG width/size	7x7

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Package Qualification Report

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT194600344	U08C919447166.100#06	190724W
MMT194600345	U08C919447166.100#05	190724Y
MMT194600346	U08C919447166.100#04	1907250

Result ☑ Pass ☐ Fail

58Z54 MCT32 Atmel product on 48L VQFN 7x7 (SMB) assembled at MMT 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 :**85°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 :** 85°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:** 85°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=5.5V System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** 85°C System: Magnum	JESD22-A110	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

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:** 85°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
	Internal Package Analysis		5 units per lot	Lot 1, 0/5 Lot 2, 0/5 Lot 3, 0/5	Pass Pass Pass	
	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:** 85°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 DIMENSIONS	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	

CENO-03BMPH839 - CCB AT86RF23 AT86RF233-ZUR and AT86RF233-ZFR catalog part numbers (CPN) av

Affected Catalog Part Numbers(CPN)

AT86RF233-ZF
AT86RF233-ZU
AT86RF233-ZUR
AT86RF233-ZFR