

Product Change Notification - RMES-19QWFS608

Date:

25 Jun 2020

Product Category:

8-bit Microcontrollers

Affected CPNs:

Notification subject:

Memo # ML112019001A Final Notice: Introduction of new package 48L VQFN (6x6x0.9mm) to an existing ATMEGA3209 and ATMEGA4809 device families that are currently available in 48L UQFN (6x6x0.5mm) 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:

Introduction of new package 48L VQFN (6x6x0.9mm) to an existing ATMEGA3209 and ATMEGA4809 device families that are currently available in 48L UQFN (6x6x0.5mm) package.

Pre Change:

Available in 48L UQFN (6x6x0.5mm)

Post Change:

Available in 48L VQFN (6x6x0.9mm)

Pre and Post Change Summary:

		Pre Change	Post Change
Catalog Part Number		No change	No change
Package type		UQFN	VQFN
Package size		6x6x0.5mm	6x6x0.9mm
Package dimension (min/max)	Overall Height	0.50 (0.45/0.55)	0.85 (0.80/0.90)
	Terminal Thickness	0.127 REF	0.20 REF
	Exposed Pad Width	4.60 (4.45/4.75)	4.10 (4.00/4.20)
	Exposed Pad Length	4.60 (4.45/4.75)	4.10 (4.00/4.20)
	Terminal to Exposed Pad	0.20 MIN	0.55 REF

Impacts to Data Sheet:

Yes - Ordering Information and Package Drawings section.

Note: Microchip will issue separate PCN for datasheet update.

Change Impact:

None



Reason for Change:

To improve manufacturability by qualifying new package for existing device families affected.

Change Implementation Status:

In Progress

Estimated First Ship Date:

July 25, 2020 (date code: 2030)

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

Time Table Summary:

Workweek	November 2019					>	June 2020					July 2020			
	44	45	46	47	48		23	24	25	26	27	28	29	30	31
Initial PCN Issue date					X										
Final PCN Issue Date									X						
Qual Report Availability									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:

November 26, 2019: Issued initial notification.

June 25, 2020: Issued final notification. Updated the notification subject, description of change and Qual report title. Attached is the qualification report and added estimated first ship date by July 25, 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_RMES-19QWFS608_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.

Affected Catalog Part Numbers (CPN)

ATMEGA3209-MU

ATMEGA3209-MUR

ATMEGA3209-MF

ATMEGA3209-MFR

ATMEGA4809-MU

ATMEGA4809-MUR

ATMEGA4809-MF

ATMEGA4809-MFR

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Affected Catalog Part Numbers(CPN)

ATMEGA3209-MU
ATMEGA3209-MUR
ATMEGA3209-MF
ATMEGA3209-MFR
ATMEGA4809-MU
ATMEGA4809-MUR
ATMEGA4809-MF
ATMEGA4809-MFR



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QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: RMES-19QWFS608

Date:
May 17, 2020

Introduction of new package 48L VQFN (6x6x0.9mm) to an existing ATMEGA3209 and ATMEGA4809 device families that are currently available in 48L UQFN (6x6x0.5mm) package.



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Package Qualification Report

Purpose: Introduction of new package 48L VQFN (6x6x0.9mm) to an existing ATMEGA3209 and ATMEGA4809 device families that are currently available in 48L UQFN (6x6x0.5mm) package.

<u>Misc.</u>	Assembly site	MMT
	BD Number	BDE005692-02
	MP Code (MPC)	59B20Y6MXVA1
	Part Number (CPN)	ATMEGA4809-MFR-VAO
	MSL information	MSL1
	Assembly Shipping Media (T/R, Tube/Tray)	T/R
	Base Quantity Multiple (BQM)	6000
	Reliability Site	MPHIL
	Qual ID	QTP3988 Rev. A
	CCB No.	3752
<u>Lead-Frame</u>	Paddle size	177x177
	Material	A194
	Manufacturer	ASM
	DAP Surface Prep	CU
	Treatment	BOT with Bare Cu on Paddle
	Process	Etched
	Lead-lock	Yes
	Part Number	10104812
	Lead Plating	Matte Tin
	Strip Size	70x x250
	Strip Density	440
<u>Bond Wire</u>	Material	CuPdAu
<u>Die Attach</u>	Part Number	3280
	Conductive	Yes
<u>MC</u>	Part Number	G700LTD
<u>PKG</u>	PKG Type	VQFN
	Pin/Ball Count	48
	PKG width/size	6 x 6 mm



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Package Qualification Report

Manufacturing Information:

Assembly Lot No.	QTY In	QTY Out
MMT-202801072.000	965	965
MMT-202801073.000	975	975
MMT-202900810.000	944	944

Result

Pass Fail _____

VQFN48 6x6 wettable (6MX) with 59B20 / UMC 8D, at MMT using 0.8 mil CuPdAu wire Passed Moisture/ Reflow Sensitivity Classification Level 1 per IPC/JEDEC J-STD-020E standard and QUALIFIED AEC Q006 Grade 1. No delamination were observed on all the units.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests MSL-1	Electrical Test : +25°C	JESD22-A113,	693(0)			Good Devices
	External Visual Inspection System: Luxo Lamp	JIP/ IPC/JEDEC J-STD-020E	693(0)	0/693	Pass	
	Bake 150°C, 24 hrs System: HERAEUS		693(0)			
	Moisture Soak 85°C/85%RH Moisture Soak 168hrs. System: Climats Excal 5423-HE		693(0)			
	Reflow 3x Convection-Reflow 260°C max System: Mancorp CR.5000F		693(0)	0/693		
	Electrical Test : +25°C		693(0)	0/693	Pass	
Temp Cycle	Stress Condition: (Standard) -65°C to +150°C, 500 Cycles System: VOTSCH VT 7012 S2	JESD22-A104	231(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C, +105°C, +125°C		231(0)	0/231	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	
	Stress Condition: (Standard) -65°C to +150°C, 1000 Cycles System: VOTSCH VT 7012 S2		213(0)			
	Electrical Test: +85°C, +105°C, +125°C		213(0)	0/213	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	

Test Number (Reference)	Test Condition	Standard / Method	Qty. (Acc.)	Def/S S	Result	Remarks
UNBIASED-HAST	Stress Condition: (Standard) +130°C/85%RH, 96H System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	231(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C		231(0)	0/231	Pass	
	Stress Condition: (Standard) +130°C/85%RH, 192H System: HIRAYAMA HASTEST PC-422R8		231(0)			
	Electrical Test: +25°C		231(0)	0/231	Pass	
BIASED-HAST	Stress Condition: (Standard) +130°C/85%RH, 96H System: HIRAYAMA HASTEST PC-422R8	JESD22-A110	231(0)			
	Electrical Test: +25°C, +85°C, +105°C +125°C		231(0)	0/231	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	
	Stress Condition: (Standard) +130°C/85%RH, 192H System: HIRAYAMA HASTEST PC-422R8		213(0)			
	Electrical Test: +25°C, +85°C, +105°C +125°C		213(0)	0/213	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	Stress Condition: Bake 175°C, 500 hrs System: HERAEUS	JESD22- A103	135 (0)			
	Electrical Test : +25°C, +85°C, +105°C, +125°C		135 (0)	0/135	Pass	
	Stress Condition: Bake 175°C, 1000 hrs System: HERAEUS		132 (0)			
	Electrical Test : +25°C, +85°C, +105°C, +125 °C		132(0)	0/132	Pass	
Solderability Temp 245°C	Bake: Temp 155°C,4Hrs System:Oven Solder Bath: Temp.245°C	J-STD-002	22 (0)	0/22	Pass	Performed at MPHIL
Physical Dimensions	Physical Dimension, 10 units from 3 lot	JESD22- B100/B108	30(0)	0/30	Pass	
Bond Strength Data Assembly	Wire Pull 1 lot, 30 wires from 5 units min	M2011.8 MIL-STD- 883	30(0) Wires	0/30	Pass	
Bond Strength Data Assembly	Bond Shear 1 lot, 30 bonds from 5 units min	M2011.8 MIL-STD- 883	30(0) bonds	0/30	Pass	