Product Change Notification / ALAN-07GWEE835

Notification Body:

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 G700LA as a new mold compound material for selected ATMEGA64xx, ATMGA16xx, ATMEGA25xx and ATMEGA32xx device families available in 64L VQFN (9x9x1.0 mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	ASE Group Chung-Li (ASCL)	ASE Group Chung-Li (ASCL)
Wire Material	Au/Cu/PdCu	Au/Cu/PdCu
Die Attach Material	EN-4900GC	EN-4900GC
Molding Compound Material	CEL-9240	**G700LA**
Lead-Frame Material	C194	C194
Lead-Frame Paddle Size	228x228/ 311x311	228x228/ 311x311
DAP Surface Prep	Ring/ Double Ring	Ring/ Double Ring

Impacts to Data Sheet:
None

Change Impact
None

Reason for Change:
To improve manufacturability by qualifying G700LA as new mold compound material.

Change Implementation Status:
In Progress

Estimated First Ship Date:
December 23, 2022 (date code: 2252)

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

Time Table Summary:

Date
29-Nov-2022

PCN Type
Manufacturing Change

PCN
ALAN-07GWEE835

Title
CCB 5064 Final Notice: Qualification of G700LA as a new mold compound material for selected ATMEGA64xx, ATMGA16xx, ATMEGA25xx and ATMEGA32xx device families available in 64L VQFN (9x9x1.0 mm) package.

Product Category
8-bit Microcontrollers

Affected CPNs
ALAN-07GWEE835_Affected_CPN_11292022.pdf
ALAN-07GWEE835_Affected_CPN_11292022.csv

Attachments
PCN_ALAN-07GWEE835 Qual Report.pdf

Qual Report Availability										X				
Final PCN Issue Date										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:

March 10, 2022: Issuance of Initial notification.

November 29, 2022: Issuance of Final notification. Attached Qual Report and added estimated first ship date on December 23, 2022.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

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.

ALAN-07GWEE835 - CCB 5064 Final Notice: Qualification of G700LA as a new mold compound material for selected ATMEGA64xx, ATMGA16xx, ATMEGA25xx and ATMEGA32xx device families available in 64L VQFN (9x9x1.0 mm) package.

Affected Catalog Part Numbers (CPN)

ATMEGA645P-MU
ATMEGA649A-MU
ATMEGA645A-MU
ATMEGA649P-MU
ATMEGA649A-MUR
ATMEGA645P-MUR
ATMEGA645A-MUR
ATMEGA649P-MUR
ATMEGA169P-16MU
ATMEGA169PV-8MU
ATMEGA165PV-8MU
ATMEGA169P-16MUR
ATMEGA169PV-8MUR
ATMEGA165PV-8MUR
ATMEGA169PV-8MURA1
ATMEGA325P-20MU
ATMEGA329PV-10MU
ATMEGA329P-20MU
ATMEGA329PV-10MN
ATMEGA329P-20MN
ATMEGA329P-20MNR
ATMEGA329P-20MUR
ATMEGA329PV-10MUR
ATMEGA2561V-8MUA0
ATMEGA2561V-8MURA0

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN# ALAN-07GWEE835

Date:
November 4, 2022

Qualification of G700LA as a new mold compound material for selected ATMEGA64xx, ATMGA16xx, ATMEGA25xx and ATMEGA32xx device families available in 64L VQFN (9x9x1.0 mm) package.

Purpose: Qualification of G700LA as a new mold compound material for selected ATMEGA64xx, ATMGA16xx, ATMEGA25xx and ATMEGA32xx device families available in 64L VQFN (9x9x1.0 mm) package.

Misc	Assembly site	ASCL
	BD Number	BD-000484-01
	MP Code (MPC)	355D8TTEBC07
	Part Number (CPN)	ATMEGA329PV-10MUR
	MSL information	MSL1/260
	Assembly Shipping Media (T/R, Tube/Tray)	Tray
	Base Quantity Multiple (BQM)	260
	Reliability Site	MPHIL
	CCB	5064
Lead-Frame	Paddle size	228x228
	Exposed Pad Size	5.4x5.4mm
	Material	C194
	DAP Surface Prep	Ring
	Treatment	Not Rough
	Process	Etched
	Lead-lock Design (with locking hole?)	No
	Part Number	110198311
	Lead Plating	Matte Tin
Bond Wire	Material	PdCu
Die Attach	Part Number	EN-4900GC
	Conductive	Yes
MC	Part Number	G700LA
PKG	PKG Type	VQFN
	Pin/Ball Count	64L
	PKG width/size	9x9x1.0mm

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Package Qualification Report

Manufacturing Information

Assembly Lot No.	MPC	Package
ASCL225100151.000	355D8TTEBC07	VQFN64 9x9
ASCL225100152.000	355D8TTEBC07	VQFN64 9x9
ASCL225200005.000	355D8TTEBC07	VQFN64 9x9

[X] **Pass** [ ] **Fail** [ ] _____

G700LA mold compound in 64L VQFN9x9x1mm using 355D8 mask at ASCL is qualified the Moisture/ Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard. No delamination observed. All units are passing electrical testing.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard / Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests **MSL-1 @ 260C**	**Electrical Test :** +85°C	JESD22-A113, JIP/ IPC/JEDEC J-STD-020E	693(0)			Good Devices
	External Visual Inspection System: Luxo Lamp		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 : +85°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		231(0)	0/231	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	
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: +85°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)			Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C		231(0)	0/231	Pass	

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 Taken from 1 lot with 45 units **Electrical Test :** +85°C	JESD22-A103	45 (0) 45 (0)	0/45	Pass	
Solderability **Temp 245°C**	**Bake:** Temp 155°C,4Hrs System:Oven Solder Bath: Temp.245°C Taken from 1 lot with min 22 units	J-STD-002	22 (0)	0/22	Pass	Performed at MPHIL
Bond Strength **Data Assembly**	Wire Pull 3 lots, 30 wires per lot from 5 units min	M2011.8 MIL-STD-883	30(0) Wires	0/30	Pass	
Bond Strength **Data Assembly**	Bond Shear 3 lots, 30 bonds per lot from 5 units min	M2011.8 MIL-STD-883	35(0) bonds	0/35	Pass	