Product Change Notification / LIAL-24FVEV066

Date:

06-Dec-2022

Product Category:

8-bit Microcontrollers, Capacitive Touch Sensors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5064.001 Final Notice: Qualification of G700LA as a new mold compound material for selected ATMEGA1xx, ATMEGA3xx, ATMEGA6xx, ATMEGA8xx, AT42QTxx, and AT89LPxx device families available in 44L VQFN (7x7x1mm) package at ASCL assembly site.

Affected CPNs:

LIAL-24FVEV066_Affected_CPN_12062022.pdf
LIAL-24FVEV066_Affected_CPN_12062022.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 G700LA as a new mold compound material for selected ATMEGA1xx, ATMEGA3xx, ATMEGA6xx, ATMEGA8xx, AT42QTxx, and AT89LPxx device families available in 44L VQFN (7x7x1mm) package at ASCL assembly site.

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

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 29, 2022 (date code: 2253)

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

Time Table Summary:

	April 2022					>	December 2022				
Workweek	14	15	16	17	18		49	50	51	52	53
Initial PCN Issue Date					x						
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: April 27, 2022: Issued initial notification.
December 6, 2022: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on December 29, 2022.

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

Attachments:

PCN_LIAL-24FVEV066_Qualification Report.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.

LIAL-24FVEV066 - CCB 5064.001 Final Notice: Qualification of G700LA as a new mold compound material for selected ATMEGA1xx
ATMEGA3xx, ATMEGA6xx, ATMEGA8xx , AT42QTxx
and AT89LPxx device families available in 44L VQFN (7x7x1mm) package at ASCL assembly site.

Affected Catalog Part Numbers(CPN)

ATMEGA324PA-MN
ATMEGA324PA-MNR
AT42QT5480-MUR
AT42QT18C15-MUR
ATMEGA16-16MQ
ATMEGA8535L-8MU
ATMEGA8535-16MU
ATMEGA8535L-8MUR
ATMEGA8535-16MUR
ATMEGA162-16MU
ATMEGA162V-8MU
ATMEGA162-16MUR
ATMEGA162V-8MUR
ATMEGA324PV-10MUA1
ATMEGA324P-20MU
ATMEGA324PV-10MU
ATMEGA324P-20MQ
ATMEGA324P-20MQR
ATMEGA324PV-10MUR
ATMEGA324P-20MUR
ATMEGA644PV-10MQ
ATMEGA644P-20MQ
ATMEGA644P-20MQR
ATMEGA644PV-10MQR
ATMEGA164PV-10MUA0
AT89LP52-20MU
AT89LP51-20MU
AT89LP51ED2-20MU
AT89LP51ID2-20MU
AT89LP51RD2-20MU
AT89LP51RB2-20MU
AT89LP51RC2-20MU
AT89LP51IC2-20MU
AT89LP6440-20MU
AT89LP3240-20MU

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN# LIAL-24FVEV066

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. The qualification of G700LA as a new mold compound material for selected ATMEGA1xx, ATMEGA3xx, ATMEGA6xx, ATMEGA8xx, AT42QTxx, and AT89LPxx device families available in 44L VQFN (7x7x1mm) package at ASCL assembly site will qualify by similarity (QBS).

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. The qualification of G700LA as a new mold compound material for selected ATMEGA1xx, ATMEGA3xx, ATMEGA6xx, ATMEGA8xx, AT42QTxx, and AT89LPxx device families available in 44L VQFN (7x7x1mm) package at ASCL assembly site will qualify by similarity (QBS).

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
	Qual ID and Rev.	REQ22000756, rev. A
	CCB	5064 and 5064.001
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

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	