Product Change Notification / LIAL-24FVEV066

Date:

27-Apr-2022

Product Category:

8-bit Microcontrollers, Capacitive Touch Sensors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5064.001 Initial 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_04272022.pdf
LIAL-24FVEV066_Affected_CPN_04272022.csv

Notification Text:

PCN Status: Initial 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, AT4.2QTxx, 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 Qualification Completion Date: July 2022

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	April 2022					->	July 2022				
Workweek	14	15	16	17	18		27	28	29	30	31
Initial PCN Issue Date					x						
Qual Report Availability										x	
Final PCN Issue Date										x	

Method to Identify Change: Traceability code

Qualification Plan: Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History:
April 27, 2022: Issued initial 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_LIAL-24FVEV066_Qual Plan.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.

QUALIFICATION PLAN SUMMARY

PCN #: LIAL-24FVEV066

Date:
February 22, 2022

Qualification of G700LA as a new mold compound material for selected ATMEGA64, ATMGA16, ATMEGA25 and ATMEGA32 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 ATMEGA64, ATMGA16, ATMEGA25 and ATMEGA32 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
	CCB No.	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
Mold Compound	Part Number	G700LA
PKG	PKG Type	VQFN
	Pin/Ball Count	64L
	PKG width/size	9x9x1.0mm

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5	ASCL	MPHIL	VQFN	Standard Pb-free solderability is the requirement.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	ASCL	MPHIL	VQFN	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5	ASCL	MPHIL	VQFN	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	ASCL	MPHIL	VQFN	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	ASCL	MPHIL	VQFN	
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at ~~+25°C~~ **85°C MSL1/260**	231	15	3	738	0	15	ASCL	MPHIL	VQFN	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
HAST	+130°C/85% RH for **96 hours** or 110°C/85%RH for 264 hours. Electrical test pre and post stress **85°C hot temp**	77	5	3	246	0	10	ASCL	MPHIL	VQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	+130°C/85% RH for **96 hrs** or +110°C/85% RH for 264 hrs. Electrical test pre and post stress at **85°C hot temp**	77	5	3	246	0	10	ASCL	MPHIL	VQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for **500 cycles.** Electrical test pre and post stress at **85°C hot temp**; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	ASCL	MPHIL	VQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

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