MICROCHIP

Product Change Notification - LIAL-22MHLM308

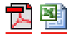
Date:

03 Aug 2018

Product Category:

8-bit Microcontrollers

Affected CPNs:



Notification subject:

CCB 3313, 3313.001 Final Notice: Qualification of MMT as a new assembly site for selected Atmel products of the 56k and 56.8k wafer technologies available in 44L and 28L PLCC packages.

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:

Qualification of MMT as a new assembly site for selected Atmel products of the 56k and 56.8k wafer technologies available in 44L and 28L PLCC packages.

Pre Change:

Assembled in ANAP using Au wire, CRM-1076E die attach and C194 lead frame material or assembled in LPI using Au or CuPdAu wire, CRM-1033BF die attach and C151 lead frame material.

Post Change:

Assembled in MMT using 3280 die attach and C151 lead frame material.

Pre and Post Change Summary:

Impacts to Data Sheet:

None

	Pre Change			Post Change
Assembly Site	Amkor Technology Philippine (P1/P2), INC. (ANAP)	Lingsen Precision Industires, LTD. (LPI)		Microchip Technology Thailand (Branch) (MMT)
Wire material	Au	Au	CuPdAu	Au
Die attach material	CRM-1076E	CRM-1033BF		3280
Molding compound material	G600	G600		G600
Lead frame material	C194	C151		C151

Change Impact:

None

Reason for Change:

To improve on-time delivery performance by qualifying MMT as a new assembly site

Change Implementation Status:

In Progress

Estimated First Ship Date:
September 03, 2018 (date code: 1836)
NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

	April 2018					August 2018					September 2018			
Workweek	14	15	16	17	18	31	32	33	34	35	36	37	38	39
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 03, 2018: Issued initial notification.
August 03, 2018: Issued final notification. Revised the subject and description to add the 56k wafer technology based on the scope. Attached the qualification report and provided estimated first ship date to be on September 03, 2018.

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_LIAL-22MHLM308_Qual_Report.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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Affected Catalog Part Numbers (CPN)

AT80C51RD2-SLRUM
AT80C51RD2-SLSUM
AT89C5115-SISUM
AT89C51AC2-SLSUM
AT89C51AC3-SLSUM
AT89C51CC01CA-SLSUM
AT89C51CC01UA-SLSUM
AT89C51CC02CA-SISUM
AT89C51CC02UA-SISUM
AT89C51CC03CA-SLRUM
AT89C51CC03CA-SLSUM
AT89C51CC03UA-SLSUM
AT89C51ED2-SLRUM
AT89C51ED2-SLSUM
AT89C51IC2-SLRUL
AT89C51IC2-SLRUM
AT89C51IC2-SLSUL
AT89C51IC2-SLSUM
AT89C51ID2-SLRUM
AT89C51ID2-SLSUM
AT89C51RB2-SLRUL
AT89C51RB2-SLRUM
AT89C51RB2-SLSUL
AT89C51RB2-SLSUM
AT89C51RC2EDR-SLRUM
AT89C51RC2-SLRUL
AT89C51RC2-SLRUM
AT89C51RC2-SLSUL
AT89C51RC2-SLSUM
AT89C51RD2-SLRUM
AT89C51RD2-SLSUM
AT89C51RD2-SLSUMA0

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: LIAL-22MHLM308

Date:
July 14, 2018

Qualification of MMT as a new assembly site for selected Atmel products of 56.8k wafer technology available in 44L PLCC package. The selected products available in 28L PLCC package will qualify by similarity (QBS).

Package Qualification Report

Purpose: Qualification of MMT as a new assembly site for selected Atmel products of 56.8k wafer technology available in 44L PLCC package. The selected products available in 28L PLCC package will qualify by similarity (QBS).

CCB No.: 3313 and 3313.001

Misc.	**CN**	ES184281-25337
	Assembly site	MMT
	BD Number	BDM-001730 rev. A
	MP Code (MPC)	568TL7T2XC01
	Part Number (CPN)	AT89C51AC3-SLSUM
Lead-Frame	**Paddle size**	230x230
	Material	CDA151
	Surface	Ag Spot plated
	Treatment	None
	Process	Stamped
	Lead-lock	No
	Part Number	10104409
	Lead Plating	Matte Tin
Bond Wire	**Material**	Au
Die Attach	**Part Number**	3280
	Conductive	Yes
MC	**Part Number**	G600V
PKG	**PKG Type**	PLCC
	Pin/Ball Count	44
Die	**Die Thickness**	15 mils
	Die Size	178.0x124.0 mils
	Fab Process (site)	56.8K/MCSO
MSL Classification		L1/245C

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Package Qualification Report

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-190100732.000	MCSO518528359.000	18147BA
MMT-190100733.000	MCSO518528359.000	18147BB
MMT-190101471.000	MCSO518528359.000	1814BRY

Result [X] Pass [ ] Fail [ ] ____________________

44L PLCC package for wafer mask 568TL assembled at MMT using Au wire is qualified at Moisture/ Reflow Sensitivity Classification Level 1 per IPC/JEDEC J-STD-020D standard. 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 (At MSL Level 1)	**Electrical Test:** +90°C 0hr CSAM Bake 150°C, 24 hrs System: HERAEUS 85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 245°C max System: Mancorp CR.5000F Post CSAM **Electrical Test:** +90°C	JESD22-A113 IPC/JEDEC J-STD-020D	900(0) 900 900 900	0/900 0/135 0/135 0/900	Passed Passed Passed	Good Devices
Temp Cycle	**Stress Condition:** (Standard) 65°C to +150°C, 500 Cycles System: VOTSCH VT 7012 S2 **Electrical Test:** +90°C System: Maverick Tester **Bond Strength:** Wire Pull (> 6.00 grams) Bond Shear (>22.00 grams)	JESD22-A104	252 252(0) 15(0)	0/252 0/15	Passed Passed	Parts had been pre-conditioned at 245°C
UNBIASED-HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** +90°C System: Maverick Tester	JESD22-A118	254 254(0)	0/254	Passed	Parts had been pre-conditioned at 245°C

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** +90°C System: Maverick Tester	JESD22-A110	252 252(0)	0/252	Passed	Parts had been pre-conditioned at 245°C
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: HERAEUS **Electrical Test :**+90°C	JESD22-A103	50 50(0)	0/50	Pass	50 units
Solderability Temp 245°C	**Bake:** Temp 155°C,4Hrs System: Oven Solder Bath: Temp.245°C Solder material: SnPb Visual Inspection: External Visual Inspection	J-STD-002	15 (0)	0/15	Pass	Performed at MPHIL
Physical Dimensions	Physical Dimension, 10 units from 3 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 6.00 grams)	M2011.8 MIL-STD-883	30(0) Wires	0/30	Pass	
	Bond Shear (>22.00 grams)	M2011.8 MIL-STD-883	30(0) bonds	0/30	Pass	