Product Change Notification - ASER-30UIEG575

Date:

05 May 2020

Product Category:

Memory

Affected CPNs:

Notification subject:

CCB 3315.003 Final Notice: Qualification of MMT as a new assembly site for selected Atmel products in the AT27xxx device family available in 32L PLCC (11.5x14x3.37mm) 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:
Qualification of MMT as a new assembly site for selected Atmel products in the AT27xxx device family available in 32L PLCC (11.5x14x3.37mm) package.

Pre Change:
Assembled at LPI assembly site using CRM-1033BF die attach material and Q1-4939 die coat material or assembled at ANAP assembly site using CRM-1076E die attach material and Q3-6646 die coat material.

Post Change:
Assembled at MMT using 3280 die attach material and Q1-4939 die coat material.

Pre and Post Change Summary:

	Pre Change		Post Change
Assembly Site	Lingsen Precision Industires, LTD. (LPI)	Amkor Technology Philippine (P1/P2), INC. (ANAP)	Microchip Technology Thailand (Branch) (MMT)
Wire Material	Au	Au	Au
Die Attach Material	CRM-1033BF	CRM-1076E	3280
Die Coat Material	Q1-4939	Q3-6646	Q1-4939
Molding Compound Material	G600	G600	G600
Lead Frame Material	A194	A194	A194

Impacts to Data Sheet:

None.

Change Impact:
None.

Reason for Change:
To improve manufacturability by qualifying MMT as new assembly site.

Change Implementation Status:
In Progress

Estimated First Ship Date:
June 10, 2020 (date code: 2024)

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

Time Table Summary:

	May 2020					June 2020				
Workweek	18	19	20	21	22	23	24	25	26	27
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:
May 05, 2020: Issued final notification.

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_ASER-30UIEG575_Qual_Report(1 of 2).pdf
PCN_ASER-30UIEG575_Qual_Report(2 of 2).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.

QUALIFICATION REPORT
RELIABILITY LABORATORY

PCN #: ASER-30UIEG575

Date
November 17, 2014

Qualification of MMT as a new assembly site for selected Atmel products in the AT27xxx device family available in 32L PLCC (11.5x14x3.37mm) package.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as a new assembly site for selected Atmel products in the AT27xxx device family available in 32L PLCC (11.5x14x3.37mm) package.
CN	BC141258
QUAL ID	Q14111
MP CODE	640021L4XA00
Part No.	HV20220PJ-G
Lot No.	MMT-151800412.000
Bonding No.	BDM-000534 rev F
CCB No.:	3315.003

<u>Package</u>

Type	28L PLCC

<u>Lead Frame</u>

Paddle size	300 x300 mils (ASM-Singapore)
Material	A194
Surface	Ag Spot Plated
Process	Etched
Lead Lock	Yes
Part Number	10102833
Treatment	None

<u>Die attach material</u>

Epoxy	3280
Wire	Au wire (MKE-Korea)
Mold Compound	G600V (Sumitomo-Japan)
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-151800412.000	N/A	1431MJE

Result [X] Pass [ ] Fail [ ] ____________________

28L PLCC assembled by MMT (ALPH) pass reliability test per Supertex standard qual plan for SMD Package. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 245°C reflow temperature per IPC/JEDEC J-STD-020D standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard / Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 250°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020D)	IPC/JEDEC J-STD-020D	25	0/25	Pass	

Precondition Prior Perform Reliability Tests (At MSL Level 1)	Bake 150°C, 24 hrs System: CHINEE			250		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			250		
	3x Convection-Reflow 250°C max			250		
	System: Vitronics Soltec MR1243					
	Electrical Test · Post test Supertex Hongkong			0/250	Pass	

PACKAGE QUALIFICATION REPORT						
Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
TEST 1: ASSEMBLY PROCESS CHARACTERIZATION						
1a. Die Shear	Die Shear (Minimum: 4.0 kgf)	MIL-STD-883J-M2019.8	5(0)	0/5	Pass	
1b. Bond Shear	Bond Shear (Minimum: 19.00 grams)	JESD22-B116	30 (0) Wires	0/30	Pass	
1c. Wire Bond Pull	Wire Pull (Minimum: 3.0 grams)	MIL-STD-883J-M2011.9 Condition C or D	30 (0) Wires	0/30	Pass	
TEST 2: FINAL TEST						
Post-Assembly Final Test Yield	Per device spec Electrical Test: Supertex HK	Per device spec >85% test yield	1185(0)	21/1185	Pass	Test Location: Supertex Hongkong Note: 98% test yield

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
TEST 3: PACKAGE INTEGRITY AND MECHANICAL TEST						
3a. Visual Examination	**Stress Condition:** Supertex spec#QCGP-1001	Supertex spec#QCGP-1001	315(0)	0/315	Pass	Test Location: Supertex Hongkong
3b. Physical Dimension	**Stress Condition:** Post Assembly	JESD22-B100B	8(0)	0/8	Pass	Test Location: Supertex Hongkong
3c. Solderability (Tin-alloy)	**Stress Condition:** 1) Condition C (Tin-alloy):8 hrs. Steam age; 2) Test Method 1:Dip&Look Test; Group 1:Test to SnPb solder (215+/-5 C); Group 2:Test to Pb-free solder (245+/-5C);	JESD22-B102E	8(0) 8(0)	0/8 0/8	Pass Pass	Test Location: Supertex Hongkong

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
TEST 4: PACKAGE INTEGRITY AND MECHANICAL TEST						
4a. Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Stress Condition:** -Bake 150°C, 24 hrs System: CHINEE -85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH -3x Convection-Reflow 250°C max System: Vitronics Soltec MR1243 Electrical Test: Post test at Supertex HK	JESD22-A113F	250(0)	0/250	Pass	Test Location: Reliability MTAI
4b. Auto Clave	**Stress Condition:** 1) for SMD,MSL pre-conditioned prior to test 2) 121C/100%RH / 15PSIG / 168 hrs Electrical Test: Post test at Supertex HK	JESD22-A102D	45 (0)	0/45	Pass	Test Location: Supertex Hongkong
4c. Thermal Shock	**Stress Condition:** 1) for SMD,MSL pre-conditioned prior to test 2) Cond B:-55 to 125C / 200 cyc Electrical Test: Post test at Supertex HK	MIL-STD-883HM1011.9	45(0)	0/45	Pass	Test Location: Supertex Hongkong
4d.Temperature Cycling	**Stress Condition:** 1) for SMD,MSL pre-conditioned prior to test 2) Cond C:-65 to 150C / 500 cyc Electrical Test: Post test at Supertex HK	MIL-STD-883HM1010.8	45(0)	0/45	Pass	Test Location: Reliability MTAI
4e. Temperature Humidity Bias	**Stress Condition:** 1) for SMD,MSL pre-conditioned prior to test 2) biased @ 85C / 85%RH for 168 / 500 1000 hrs Electrical Test: Post test at Supertex HK	JESD22-A101C	45(0)	0/45	Pass	Test Location: Supertex Sunnyvale USA

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: ASER-30UIEG575

Date:
July 9, 2018

Qualification of MMT as a new assembly site for selected Atmel products in the AT27xxx device family available in 32L PLCC (11.5x14x3.37mm) package.

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Package Qualification Report

Purpose: **Qualification of MMT as a new assembly site for selected Atmel products in the AT27xxx device family available in 32L PLCC (11.5x14x3.37mm) package.**

CCB Number: **3315.003**

Misc.	**CN**	ES184659-25367
	Assembly site	MMT
	BD Number	BDM-001712 rev A
	MP Code (MPC)	340357T2XC01
	Part Number (CPN)	AT27BV1024-90JU
Lead-Frame	**Paddle size**	230x230 mils
	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
Die Coat	**Part Number**	Q1-4939
MC	**Part Number**	G600V
PKG	**PKG Type**	PLCC
	Pin/Ball Count	44
Die	**Die Thickness**	15 mils
	Die Size	139.0x146.0 mils
	Fab Process (site)	34K/MCSO

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Package Qualification Report

Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
MMT-190100734.000	MCSO518528564.000	18147BC
MMT-190100735.000	MCSO518528564.000	18147BD
MMT-190100736.000	MCSO518528564.000	18147BE

Result [X] Pass [ ] Fail [ ] ____________________

44L PLCC package for wafer mask 34035 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:** +25°C	JESD22-A113	803(0)	0/803		Good Devices
	0hr CSAM			0/135	Passed	
	Bake 150°C, 24 hrs System: HERAEUS		803			
	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D	803			
	3x Convection-Reflow 245°C max System: Mancorp CR.5000F		803			
	Post CSAM			0/135	Passed	
	Electrical Test: +25°C			0/803	Passed	
Temp Cycle	**Stress Condition:** (Standard) 65°C to +150°C, 500 Cycles System: VOTSCH VT 7012 S2	JESD22-A104	238			Parts had been pre-conditioned at 245°C
	Electrical Test: +25°C		238(0)	0/238	Passed	
	Bond Strength: Wire Pull (> 6.00 grams) Bond Shear (>22.00 grams)		15(0)	0/15	Passed	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED-HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** +25°C	JESD22-A118	248 248(0)	0/248	Passed	Parts had been pre-conditioned at 245°C
HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** +25°C	JESD22-A110	238 238(0)	0/238	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
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: HERAEUS **Electrical Test :**+25°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	

ASER-30UIEG575 - CCB 3315.003 Final Notice: Qualification of MMT as a new assembly site for selected Atme

Affected Catalog Part Numbers(CPN)

AT27BV256-70JU
AT27LV256A-90JU
AT27BV256-70JU-T
AT27LV256A-90JU-T
AT27LV512A-90JU
AT27LV512A-90JU-T
AT27BV010-90JU
AT27LV010A-70JU
AT27BV010-90JU-T
AT27LV010A-70JU-T
AT27LV020A-12JU
AT27LV020A-12JU-T
AT27C256R-45JU
AT27C256R-70JU
AT27C256R-70JU-306
AT27C256R-45JU-T
AT27C256R-70JU-T
AT27C512R-45JU
AT27C512R-70JU
AT27C512R-45JU-T
AT27C512R-70JU-T
AT27C020-55JU
AT27C020-90JU
AT27C020-55JU-T
AT27C020-90JU-T