Product Change Notification / MFOL-15ONYR698

Date:

04-Aug-2022

Product Category:

Crypto Authentication

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4925 Final Notice: Qualification of A194 as an additional lead frame material for selected Atmel products available in 8L UDFN (2x3x0.6mm) package at MMT assembly site.

Affected CPNs:

MFOL-15ONYR698_Affected_CPN_08042022.pdf
MFOL-15ONYR698_Affected_CPN_08042022.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 A194 as an additional lead frame material for selected Atmel products available in 8L UDFN (2x3x0.6mm) package at MMT assembly site.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site	Microchip Technology Thailand (Branch) (MMT)	Microchip Technology Thailand (Branch) (MMT)	Microchip Technology Thailand (Branch) (MMT)
Wire Material	CuPdAu	CuPdAu	CuPdAu
Die Attach Material	8600	8600	8600
Molding Compound Material	G700LTD	G700LTD	G700LTD
Lead-Frame Material	EFTEC-64T	EFTEC-64T	A194

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve productivity by qualifying A194 as an additional lead frame material at MMT assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: August 25, 2022 (date code: 2235)

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

Time Table Summary:

	December 2021					>	**August 2022**				
Workweek	49	50	51	52	53		32	33	34	35	36
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: December 28, 2021: Issued initial notification.
August 4, 2022: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on August 25, 2022. Updated subject, description and pre and post change summary table to change A194 as an additional lead frame material. Updated affected CPN list to include catalog part numbers (CPN) released prior issuance of the Final PCN.

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

Attachments:

PCN_MFOL-15ONYR698_Qual_Report.pdf

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

Terms and Conditions:

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: MFOL-15ONYR698

Date:
July 19, 2022

Qualification of A194 as an additional lead frame material for selected Atmel products available in 8L UDFN (2x3x0.6mm) package at MMT assembly site.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of A194 as an additional lead frame material for selected Atmel products available in 8L UDFN (2x3x0.6mm) package at MMT assembly site.
CN	E000083686
QUAL ID	R2200086 rev. A
MP CODE	58962TQ4BSDA
Part No.	ATECC608B-MAHDA-S
Bonding No.	BD-000365 Rev. 02
CCB No.	4925
Package	
Type	8L UDFN
Package size	2 x 3 x 0.6 mm
Lead Frame	
Paddle size	79 x 67 mils
Material	A194
Surface	PPF
Process	Etched
Lead Lock	Yes
Part Number	10100861
Material	
Epoxy	8600
Wire	CuPdAu wire
Mold Compound	G700LTD
Plating Composition	NiPdAu

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-223901915.000	U8CD922323539.100	21516AY
MMT-223902037.000	U8CD922323539.100	2152823
MMT-223902038.000	U8CD922323539.100	215283B

Result ☒ Pass ☐ Fail ☐ __________________

8L UDFN (2x3x0.6 mm) assembled by MMT pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

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 and 85°C System: NEXTEST_PT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max			693		
	System: Vitronics Soltec MR1243					
	Electrical Test: +25°C and 85°C System: NEXTEST_PT			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, 85°C and 100°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.50 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, 85°C and 100°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot

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: SHEL LAB	JESD22-A103		135		45 units / lot
	Electrical Test: +25°C, 85°C and 100°C System: NEXTEST_PT		135(0)	0/135	Pass	
Solderability Temp 215°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000	J-STD-002	22 (0)	22		
	Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63, Pb37 System: ERSA RA 2200D			22		
	Visual Inspection: External Visual Inspection			0/22	Pass	
Solderability Temp 245°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000	J-STD-002	22 (0)	22		
	Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D			22		
	Visual Inspection: External Visual Inspection			0/22	Pass	
Bond Strength Data Assembly	Wire Pull (>2.50 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	

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Affected Catalog Part Numbers(CPN)

ATSHA204A-MAHMD-B
ATSHA204A-MAHDA-T
ATSHA204A-MAHCZ-T
ATSHA204A-MAHLH-T
ATSHA204A-MAHLC-T
ATSHA204A-MAHDA-S
ATSHA204A-MAHCZ-S
ATSHA204A-MAHMF-S
ATSHA204A-MAHMG-S
ATSHA204A-MAHME-S
ATSHA204A-MAHPG-S
ATSHA204A-MAHZH-T
ATSHA204A-MAHNK-T
ATSHA204A-MAHJV-T
ATSHA204A-MAHJW-T
ATSHA204A-MAHJX-T
ATSHA204A-MAHPG-T
ATSHA204A-MAHLE-T
ATSHA204A-MAH1D-T
ATSHA204A-MAH1T-T
ATSHA204A-MAH2D-S
ATSHA204A-MAH1T-S
ATSHA204A-MAH2R-S
ATSHA204A-MAH3E-S
ATSHA204A-MAH3N-S
ATSHA204A-MAH3V-S
ATSHA204A-MAH3C-T
ATSHA204A-MAHLS-T
ATSHA204A-TCSMU
ATECC608B-MAHMD-B
ATECC608A-TNGACTU-B
ATECC608B-TNGACTU-B
ATECC608A-TNGLORAU-B
ATECC608A-MAHMD-B
ATECC608B-TNGLORAU-B
ATECC608B-TNGTLSU-B
ATECC608B-TFLXTLSU-PROTO
ATECC608A-TNGTLSU-B
ATECC608A-TFLXTLSU-PROTO
ATECC608A-MAHA2-B
ATECC608A-MAHT2-B
ECC608-TFLXWPCU-PROTO

ATECC608B-MAVDA-S
ATECC608B-MAVHL-T
ATECC608B-MAVHL-S
ATECC608B-MAVDA-T
ATECC608A-MAHZN-S
ATECC608B-MAHHL-T
ATECC608B-MAHZN-S
ATECC108A-MAHUC-T
ATECC108A-MAHUT-T
ATECC108A-MAHNR-T
ATECC108A-MAHDA-T
ATECC108A-MAHCZ-T
ATECC108A-MAHZU-T
ATECC508A-MAHDA-T
ATECC508A-MAHCZ-T
ATECC508A-MAHWF-T
ATECC508A-MAHHL-T
ATECC508A-MAHDA-S
ATECC508A-MAHCZ-S
ATECC508A-MAHHL-S
ATECC508A-MAHKN-T
ATECC508A-MAHZA-T
ATECC508A-MAHZC-T
ATECC508A-MAHZG-S
ATECC508A-MAHZA-S
ATECC508A-MAHZC-S
ATECC508A-MAHUW-T
ATECC508A-MAHUZ-T
ATECC508A-MAHZK-T
ATECC508A-MAHZK-S
ATECC508A-MAHAW-S
ATECC508A-MAHKN-S
ATECC508A-MAHWW-S
ATECC508A-MAHWW-T
ATECC608A-MAHDA-S
ATECC608A-MAHDA-T
ATECC608A-MAHCZ-S
ATECC608A-MAHCZ-T
ATECC608A-MAHHL-S
ATECC608A-MAHHL-T
ATECC608A-MAHA2-S
ATECC608A-TNGACTU-C
ATECC608B-TNGACTU-C
ATECC608A-TNGLORAU-C
ATECC608B-TNGLORAU-C
ATECC608B-TNGTLSU-C
ATECC608A-TNGTLSU-C

ATECC608A-MAH22-T
ATECC608A-MAHTN-T
ECC608-TFLXWPCU
ATECC608A-TNGACTU-G
ATECC608B-TNGACTU-G
ATECC608A-TNGLORAU-G
ATECC608B-TNGLORAU-G
ATECC608B-TNGTLSU-G
ATECC608A-TNGTLSU-G
ATECC508A-MAH1A-T
ATECC508A-MAH1C-T
ATECC608A-MAH1G-T
ATECC508A-MAH1Q-T
ATECC608A-MAH1W-T
ATECC608A-MAH2B-T
ATECC508A-MAH2E-T
ATECC608A-MAH2G-T
ATECC508A-MAH3A-T
ATECC608B-MAH3F-T
ATECC608A-MAHGX-T
ATECC508A-MAHJ4-S
ATECC608A-MAHLG-T
ECC608-MAHNT-T
ATECC508A-MAHQA-T
ATECC508A-MAH1A-S
ATECC508A-MAH1B-S
ATECC508A-MAH1C-S
ATECC608A-MAH1G-S
ATECC608A-MAH1K-S
ATECC508A-MAH1Q-S
ATECC608A-MAH1U-S
ATECC508A-MAH2F-S
ATECC608A-MAH2G-S
ATECC608A-MAH2K-S
ATECC608A-MAH2M-S
ATECC608A-MAH2V-S
ATECC608A-MAH2X-S
ATECC608A-MAH2Y-S
ATECC508A-MAH3A-S
ATECC508A-MAH3B-S
ATECC608A-MAH3Q-S
ATECC608B-MAH3S-T
ATECC608B-MAH4I-S
ATECC608A-MAH4W-T
ATECC608B-MAHA5-S
ATECC608B-MAHA6-S
ATECC608A-MAHAA-S

ATECC608A-MAHAC-S
ATECC608B-MAHAF-S
ATECC608B-MAHAK-S
ATECC608A-MAHAP-S
ATECC608A-MAHAV-S
ATECC608B-MAHCZ-S
ATECC608A-MAHD3-S
ATECC608B-MAHDA-S
ATECC508A-MAHGF-S
ATECC608A-MAHGP-S
ATECC608B-MAHHL-S
ECC608-MAHNT-S
ATECC508A-MAHPH-S
ATECC508A-MAHT1-S
ATECC608A-MAH2U-T
ATECC608A-MAH3J-T
ATECC608B-MAH3W-T
ATECC608A-MAH4K-T
ATECC608B-MAH5O-T
ATECC608A-MAH5P-T
ATECC608B-MAH5V-T
ATECC608B-MAHCZ-T
ATECC608B-MAHDA-T
ATECC608A-MAHGA-T
ATECC608B-MAHPA-T
ATECC608B-MAHSB-T
ATECC608B-MAHSC-T
ATECC608A-MAHVL-T
ATECC608A-MAHVM-T
ATECC608B-MAHWT-T
ATECC608B-MAHZD-T
ATECC608B-TCSMU
ATECC608B-TFLXTLSU
ATECC608A-TCSMU
ATECC608A-TFLXTLSU