



Product Change Notification / CENO-05PDXJ039

Date:

05-May-2023

Product Category:

Crypto Memory, FPGA Configuration Memory, Memory

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6234 Final Notice: Qualification of 90x90 mils and 95x155 mils lead frame paddle size for AT93C56A-10SQ-2.7-T, AT88SC1608-10SU-00, AT88SC1608-10SU-00-T, AT17LV256-10NU and AT17LV256-10NU-T catalog part numbers (CPN) available in 8L SOIC (3.90mm(.150in)) package at ANAP assembly site.

Affected CPNs:

[CENO-05PDXJ039_Affected_CPN_05052023.pdf](#)

[CENO-05PDXJ039_Affected_CPN_05052023.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 90x90 mils and 95x155 mils lead frame paddle size for AT93C56A-10SQ-2.7-T, AT88SC1608-10SU-00, AT88SC1608-10SU-00-T, AT17LV256-10NU and AT17LV256-10NU-T catalog part numbers (CPN) available in 8L SOIC (3.90mm(.150in)) package at ANAP assembly site.

Pre and Post Change Summary:

	Pre Change		Post Change	
Assembly Site	Amkor Technology Philippine (P1/P2), INC. (ANAP)		Amkor Technology Philippine (P1/P2), INC. (ANAP)	
Wire Material	Au		Au	
Die Attach Material	8290	84-1LMISR 4	8290	84-1LMISR 4
Molding Compound Material	G600	G700	G600	G700
Lead-Frame Material	C194		C194	
Lead-Frame Paddle Size	60x60 mils	90x130 mils	90x90 mils	95x155 mils
	See attached Pre and Post change comparison.			
DAP Surface Prep	Ag		Ag	

Impacts to Data Sheet:None

Change ImpactNone

Reason for Change:To improve productivity by qualifying 90x90 mils and 95x155 mils lead frame paddle size at ANAP assembly site.

Change Implementation Status:In Progress

Estimated First Ship Date:May 31, 2023 (date code: 2322)

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

Time Table Summary:

	May 2023				
Workweek	1 8	1 9	2 0	2 1	2 2
Qual Report Availability	x				
Final PCN Issue	x				

Date					
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 5, 2023: 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.

Attachments:

[PCN_CENO-05PDXJ039_Pre and Post Change_Summary.pdf](#)
[PCN_CENO-05PDXJ039_Qual Report.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.

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Affected Catalog Part Numbers (CPN)

AT93C56A-10SQ-2.7-T

AT88SC1608-10SU-00

AT88SC1608-10SU-00-T

AT17LV256-10NU

AT17LV256-10NU-T



MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: CENO-05PDXJ039

Date:
March 27, 2017

**Qualification of 90x90 mils and 95x155 mils lead
frame paddle size for AT93C56A-10SQ-2.7-T,
AT88SC1608-10SU-00, AT88SC1608-10SU-00-T,
AT17LV256-10NU and AT17LV256-10NU-T catalog
part numbers (CPN) available in 8L SOIC
(3.90mm(.150in)) package at ANAP assembly site.
This is a qualification by similarity (QBS).**



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose Qualification of 90x90 mils and 95x155 mils lead frame paddle size for AT93C56A-10SQ-2.7-T, AT88SC1608-10SU-00, AT88SC1608-10SU-00-T, AT17LV256-10NU and AT17LV256-10NU-T catalog part numbers (CPN) available in 8L SOIC (3.90mm(.150in)) package at ANAP assembly site. This is a qualification by similarity (QBS).

CN	ES076181
QUAL ID	Q16184 Rev.A
MP CODE	TG1054D3XE1C
Part No.	CAP1298-1-SL
Bonding No.	BDE-003747 Rev. 02
CCB No.	2662 and 6234

Package

Type	14L SOIC
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Package size	150 mils
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Lead Frame

Paddle size	90 x 140 mils
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Material	C194
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Surface	Bare copper on paddle
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Process	Stamp
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Lead Lock	No
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Part Number	101385603
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Treatment	None
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Material

Epoxy	8290
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Wire	Au wire
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Mold Compound	G600
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Plating Composition	Matte Tin
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MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
ANAP172600545.000	GF3E917152979.100	163860A
ANAP172600546.000	GF3E917152979.100	163860B
ANAP172600547.000	GF3E917152979.100	163860C

Result

☒

Pass

☐

Fail

☐

14L SOIC (.150") assembled by MTAI 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-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 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020D)	IPC/JEDEC C J-STD- 020D	135	0/135	Pass	

<u>Precondition Prior Perform Reliability Tests (At MSL Level 1)</u>	Electrical Test :+25°C System: FUSION_MX	JESD22- A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test :+25°C System: FUSION_MX			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
	Stress Condition: -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Electrical Test: + 25°C System: FUSION_MX Bond Strength: Wire Pull (> 2.3 grams) Bond Shear (>7.00 grams)	JESD22-A104	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X Electrical Test: +25°C System: FUSION_MX	JESD22-A118	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HAST 6000X Electrical Test: +25°C System: FUSION_MX	JESD22-A110	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB Electrical Test :+25°C System: FUSION_MX	JESD22-A103	45(0)	45 0/45	Pass	45 units

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Bond Strength Data Assembly	Wire Pull (> 2.3 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>7.00 grams)	JESD22- B116	30 (0) bonds	0/30	Pass	

Process	Test Item	Criteria	Pass/Fail
Die Attach	Epoxy Void	Single void = 5% max of die area Cumulative void = 10% max of die area	Passed
	Die Tilt	For die size $\leq 100 \times 100$ mils = 1 mil max	Passed
	Adhesive Thickness	If die size $\leq 100 \times 100$ mils, BLT = 0.4 mil min	Passed
	Die Shear	Die shear = 0.04kg / 100sq. mils	Passed
	Ball Aspect Ratio (BAR)	18% to 28%	Passed
	Wire Pull test	3.0 gm-f min for wire size: 1.0 mil	Passed
	Ball Shear Test	25 gm-f min for BPO: 94 um	
	Stitch Pull test	3.0 gm-f min for wire size: 1.0 mils	Passed
	Crater test	Reject any amount of crack	Passed
	IMC Check	Reject < 60% coverage	Passed
Mold	Internal Void	Reject > 20 mils in longest dimension	Passed
	Wire Sweep	Max 15%	Passed
CLF	Plating Thickness	400-700 micro inches	Passed
	SN Content	100%	Passed
TFS	Coplanarity	for SOIC N – 3 mils max	Passed
	Seating Plane Height	for SOIC N – 4 to 9.8 mils	Passed
	Tip to Tip	for SOIC N – 228 to 244 mils	Passed

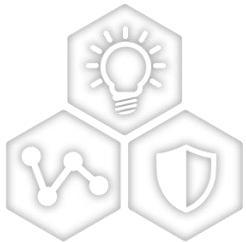
CCB 6234

Pre and Post Change Summary

PCN #: CENO-05PDXJ039



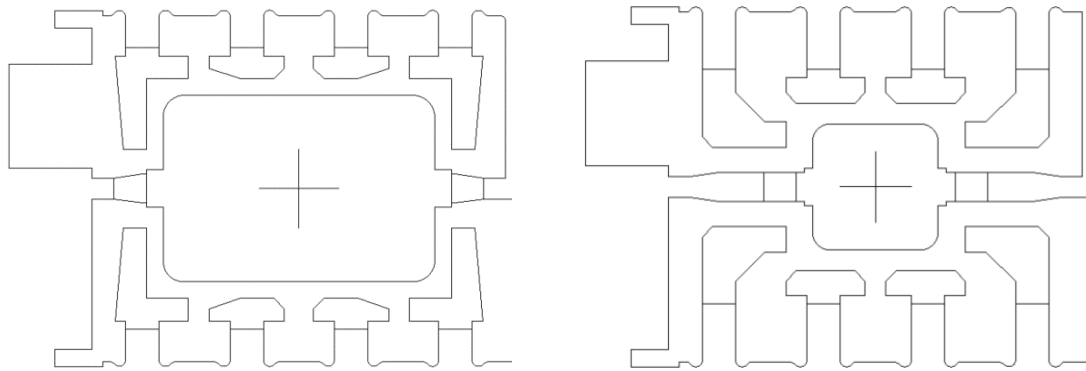
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SMART | CONNECTED | SECURE

LEAD FRAME COMPARISON

ANAP



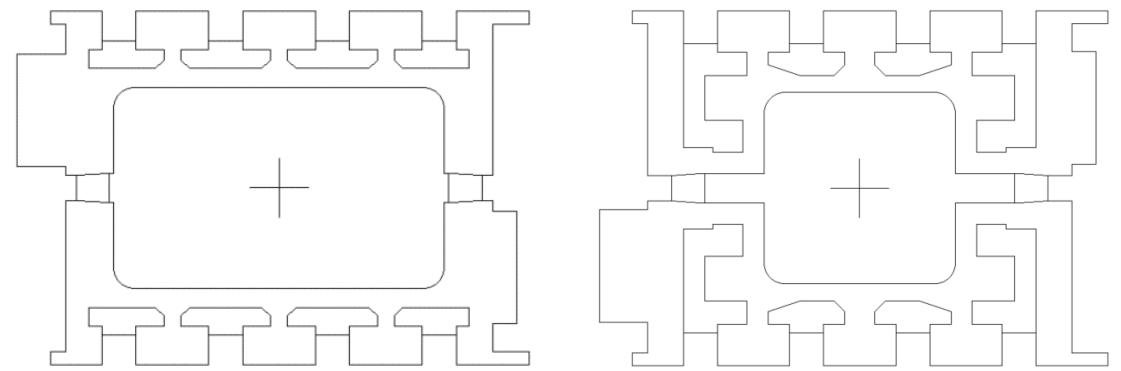
90 x 130 mils

60 x 60 mils

Note: Not to scale

Lead frame Material	C194	
Lead-Frame Paddle Size	90 x 130 mils	60 x 60 mils

ANAP



95 x 155 mils

90 x 90 mils

Note: Not to scale

Lead frame Material	C194	
Lead-Frame Paddle Size	95 x 155 mils	90 x 90 mils