



Product Change Notification / RMES-13RZIY008

Date:

16-Nov-2022

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4820 Final Notice: Qualification of ATP7 as an additional assembly site for selected Atmel ATXMEGA32E5, ATXMEGA16E5, ATXMEGA8E5 and AT73C507 device families available in 32L UQFN (4x4x0.6mm) package.

Affected CPNs:

[RMES-13RZIY008_Affected_CPN_11162022.pdf](#)

[RMES-13RZIY008_Affected_CPN_11162022.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 ATP7 as an additional assembly site for selected Atmel ATXMEGA32E5, ATXMEGA16E5, ATXMEGA8E5 and AT73C507 device families available in 32L UQFN (4x4x0.6mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change
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Assembly Site		ASE Inc. (ASE)	ASE Inc. (ASE)	Amkor Technology Philippines (P3/P4), INC. (ATP7)
Wire material		PdCu	PdCu	CuPdAu
Die attach material	Material	FH-900	FH-900	CDF215
	Conductive	Non-conductive	Non-conductive	Conductive
Molding compound material		G631	G631	G631
Lead frame material		C194	C194	C194
Lead Frame design		Refer to attached Pre and Post change summary file.		

Impacts to Data Sheet:None

Change Impact:None

Reason for Change:To improve on-time delivery performance by qualifying ATP7 as an additional assembly site.

Change Implementation Status:In Progress

Estimated First Ship Date:December 31, 2022 (date code: 2253)

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

Time Table Summary:

	September 2021					>	November 2022					December 2022			
Workweek	36	37	38	39	40		45	46	47	48	49	50	51	52	53
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:

September 14, 2021: Issued initial notification.

November 16, 2022: Issued final notification. Attached the Qualification Report. Added lead frame design in Pre and Post change summary table and ppt file in attachment section. Provided estimated first ship date to be on December 31, 2022.

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

Attachments:

[PCN_RMES-13RZIY008_Pre and Post Change_Summary.pdf](#)

[PCN_RMES-13RZIY008_Qual_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: RMES-13RZIY008

Date:
November 4, 2022

**Qualification of ATP7 as an additional assembly site for selected
Atmel ATXMEGA32E5, ATXMEGA16E5, ATXMEGA8E5 and AT73C507
device families available in 32L UQFN (4x4x0.6mm) package.**



MICROCHIP Package Qualification Report

Purpose: Qualification of ATP7 as an additional assembly site for selected Atmel ATXMEGA32E5, ATXMEGA16E5, ATXMEGA8E5 and AT73C507 device families available in 32L UQFN (4x4x0.6mm) package.

<u>Misc.</u>	Assembly site	ATP7
	BD Number	BD-000194-01
	MP Code (MPC)	359PD7R3BC03
	Part Number (CPN)	ATXMEGA32E5-M4U
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	Kostat KS-870858
	Base Quantity Multiple (BQM)	Tray – 490
	Qual ID and Revision	REQ2101575 Rev. A
	CCB No.	4820
<u>Lead-Frame</u>	Paddle size	118X118
	Material	C194
	DAP Surface Prep	Ring Plating
	Treatment	Roughened
	Process	Etched
	Lead-lock	No
	Part Number	101420487
	Lead Plating	Matte Sn
	Strip Size	250 x 70mm
<u>Bond Wire</u>	Material	CuPdAu
<u>Die Attach</u>	Part Number	CDF215
	Conductive	Conductive
<u>MC</u>	Part Number	G631
<u>PKG</u>	PKG Type	UQFN
	Pin/Ball Count	32
	PKG width/size	4x4x0.6mm



MICROCHIP Package Qualification Report

Manufacturing Information:

Assembly Lot #	MPC	Package
ATP7222600032.000	359PD7R3BC03	32UQFN
ATP7222600033.000	359PD7R3BC03	32UQFN
ATP7222600034.000	359PD7R3BC03	32UQFN

Result



Pass



Fail



359PD mask MCSO 35.9K in 32L UQFN 4x4x0.6mm at ATP7 is qualified the Moisture/ Reflow Sensitivity Classification Level 3 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard. No significant delamination observed on all units.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests MSL-3 @ 260C	Electrical Test : 25°C, 85°C	JESD22-A113,	693(0)			Good Devices
	External Visual Inspection System: Luxo Lamp	JIP/ IPC/JEDEC J-STD-020E	693(0)	0/693	Pass	
	Bake 150°C, 24 hrs System: HERAEUS		693(0)			
	Moisture Soak 30°C/60%RH Moisture Soak 168hrs. System: Climats Excal 5423-HE		693(0)			
	Reflow 3x Convection-Reflow 260°C max System: Mancorp CR.5000F		693(0)	0/693		
	Electrical Test : 25°C, 85°C		693(0)	0/693	Pass	
Temp Cycle	Stress Condition: (Standard) -65°C to +150°C, 500 Cycles System: VOTSCH VT 7012 S2	JESD22-A104	231(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C		231(0)	0/231	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	
	Cross Section		3(0)	0/3	Pass	
	Stress Condition: (Standard) -65°C to +150°C, 1000 Cycles System: VOTSCH VT 7012 S2		213(0)	0/213	Pass	
	Electrical Test: +85°C		213(0)	0/213	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	

Test Number (Reference)	Test Condition	Standard / Method	Qty. (Acc.)	Def/S S	Result	Remarks
UNBIASED-HAST	Stress Condition: (Standard) +130°C/85%RH, 96H System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	231(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C		231(0)	0/231	Pass	
	Stress Condition: (Standard) +130°C/85%RH, 192H System: HIRAYAMA HASTEST PC-422R8		231(0)			
	Electrical Test: +25°C		231(0)	0/231	Pass	
High Temperature Storage Life	Stress Condition: Bake 175°C, 500 hrs System: HERAEUS	JESD22-A103	45 (0)			
	Electrical Test : +25°C +85°C		45 (0)	0/45	Pass	
Solderability Temp 245°C	Bake: Temp 155°C,4Hrs System:Oven Solder Bath: Temp.245°C	J-STD-002	22 (0)	0/22	Pass	Performed at MPHIL
Physical Dimensions	Physical Dimension, 10 units from 3 lot	JESD22-B100/B108	30(0)	0/30	Pass	
Bond Strength Data Assembly	Wire Pull 1 lot, 35 wires from 5 units min	M2011.8 MIL-STD-883	35(0) Wires	0/35	Pass	
Bond Strength Data Assembly	Bond Shear 1 lot, 35 bonds from 5 units min	M2011.8 MIL-STD-883	35(0) bonds	0/35	Pass	

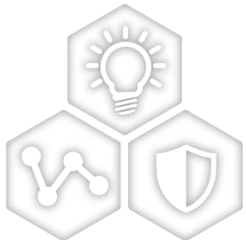
CCB 4820

Pre and Post Change Summary

PCN# RMES-13RZIY008



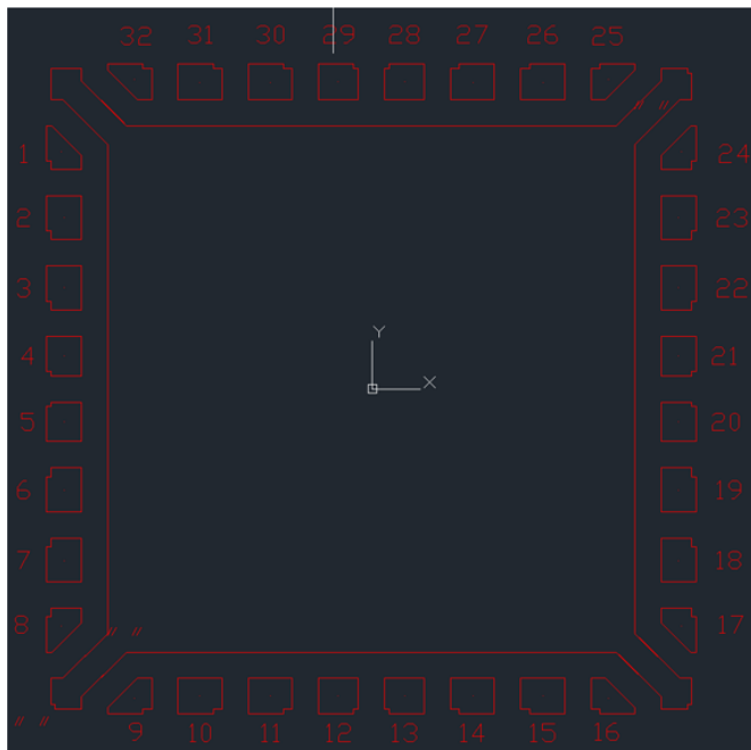
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LeadFrame Comparison

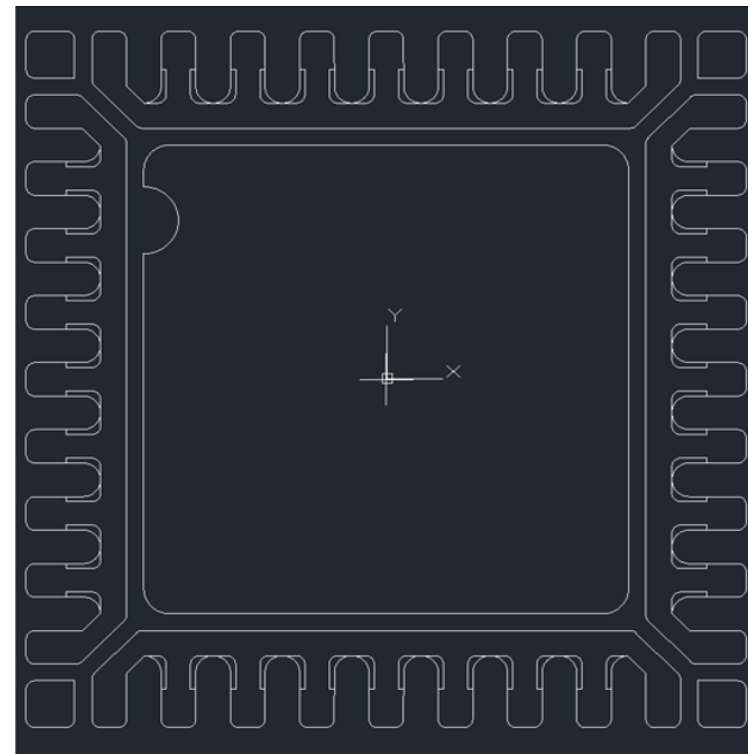
ASE



Lead frame material

C194

ATP7



Lead frame material

C194

RMES-13RZIY008 - CCB 4 ATXMEGA: ATXMEGA8E5 and AT73C507 device families available in 32L UQFN (

Affected Catalog Part Numbers(CPN)

ATXMEGA32E5-M4U
ATXMEGA32E5-M4UR
ATXMEGA16E5-M4U
ATXMEGA16E5-M4UR
ATXMEGA8E5-M4U
ATXMEGA8E5-M4UR
AT73C507-M4UR730