

Product Change Notification: MFOL-15TZWE133

Date:

03-Dec-2024

Product Category:

8-Bit Microcontrollers

Notification Subject:

CCB 7138 Final Notice: Qualification of QMI519 as a new die attach material for AVR64DA64, AVR64DB64, AVR128DA64 and AVR128DB64 device families available in 64L TQFP (10x10x1mm) package at MTAI assembly site.

Affected CPNs:

MFOL-15TZWE133_Affected_CPN_12032024.pdf MFOL-15TZWE133_Affected_CPN_12032024.csv

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 QMI519 as a new die attach material for AVR64DA64, AVR64DB64, AVR128DA64 and AVR128DB64 device families available in 64L TQFP (10x10x1mm) package at MTAI assembly site.

Pre and Post Summary Changes:

	Pre Change	Post Change
Assembly Site	Microchip Technology Thailand (HQ) (MTAI)	Microchip Technology Thailand (HQ) (MTAI)

Wire Material	CuPdAu	CuPdAu
Die Attach Material	3280	QMI519
Molding Compound Material	G700HA	G700HA
Lead-Frame Material	C7025	C7025

Impacts to Datasheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying QMI519 as a new die attach material.

Change Implementation Status: In Progress

Estimated First Ship Date: 31 December 2024 (date code: 251)

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

Timetable Summary:

	September 2024			>	December 2024						
Work Week	36	37	38	39	40		49	50	51	52	53
Initial PCN Issue Date	х										
Qual Report Availability							х				
Final PCN Issue Date							х				
Estimated Implementation Date											х

Method to Identify Change: Traceability Code

Qualification Report: Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History:

September 05, 2024: Issued Initial notification.

December 03, 2024: Issued final notification. Revised affected parts list to add AVR128DA64S-E/PT, AVR128DA64S-I/PT, AVR128DA64ST-I/PT and AVR128DA64ST-E/PT catalog part numbers. Updated the notification subject and description of change to reflect device families instead of catalog part numbers. Attached the Qualification Report. Provided estimated first ship date to be on December 31, 2024.

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

Attachments:

PCN_MFOL-15TZWE133 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 <u>change your PCN profile</u>, <u>including opt out</u>, 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)

AVR64DA64-E/PT AVR64DA64-I/PT AVR64DA64T-I/PT AVR64DA64T-E/PT AVR128DA64-E/PT AVR128DA64-I/PT AVR128DA64T-I/PT AVR128DA64T-E/PT AVR128DA64S-E/PT AVR128DA64S-I/PT AVR128DA64ST-I/PT AVR128DA64ST-E/PT AVR128DB64-E/PT AVR128DB64-I/PT AVR128DB64T-I/PT AVR128DB64T-E/PT AVR64DB64-E/PT AVR64DB64-I/PT AVR64DB64T-I/PT AVR64DB64T-E/PT



QUALIFICATION REPORT SUMMARY RELIABILITY LABORATORY

PCN #: MFOL-15TZWE133

Date: November 12, 2024

Qualification of QMI519 as a new die attach material for AVR64DA64, AVR64DB64, AVR128DA64 and AVR128DB64 device families available in 64L TQFP (10x10x1mm) package at MTAI assembly site.



Purpose	Qualification of QMI519 as a new die attach material for AVR64DA64, AVR64DB64,
	AVR128DA64 and AVR128DB64 device families available in 64L TQFP
	(10x10x1mm) package at MTAI assembly site
CN	E000243158
QUAL ID	R2401192 Rev. A.
MP CODE	KV0014V2XA01
Part No.	AVR128DA64-E/PT
Bonding No.	BD-002591 Rev. 01
CCB No.:	7138
<u>Package</u>	
Туре	64L TQFP
Package size	10 x 10 x 1mm
Lead Frame	
Paddle size	200 x 200 mils
Material	C7025
Surface	Bare Cu
Process	Stamped
Lead Lock	No
Part Number	10106407
Treatment	BOT
<u>Material</u>	
Ероху	QMI519
Wire	CuPd2N wire
Mold Compound	G700HA
Plating Composition	Matte Sn



Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI252300196.000	GRSM424470841.100	24364H2
MTAI252300309.000	GRSM424470841.100	243667R
MTAI252300310.000	GRSM424470841.100	243667T

Result

X Pass

Fail

64L TQFP (10x10x1mm) 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-020E standard.

PACKAGE QUALIFICATION REPORT									
Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks			
Precondition Prior Perform Poliability Tests	Electrical Test: +25°C, 85°C and 125°C System: J750	JESD22- A113	693(0)	0/693		Good Devices			
(At MSL Level 1)	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, 85°C and 125°C System: J750		693(0)	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	JESD22- A104	004(0)	0/231	Desa	Parts had been pre-conditioned at 260°C			
Temp Cycle	System: J750		231(0)	0/231	Pass	77 Units / Iot			
	Wire Pull (>3.00 grams)		15(0)	0/15	Fass				
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		0/231		Parts had been pre-conditioned at 260°C			
	Electrical Test: +25°C System: J750		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		0/231		Parts had been pre-conditioned at 260°C			
	Electrical Test: +25°C, 85°C and 125°C System: J750		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	Stress Condition: Bake 175°C, 504 hrs. System: TPS Bake Oven	JESD22- A103		0/135		45 units / lot			
Storage Life	Electrical Test: +25°C, 85°C and 125°C System: J750		135(0)	0/135	Pass				
Bond Strength	Wire Pull (>3.00 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass				
Data Assembly	Bond Shear (>15.00 grams)	CDF-AEC- Q100-001	30(0) bonds	0/30	Pass				