



Product Change Notification / MFOL-25LWZY479

Date:

26-Jan-2024

Product Category:

8-Bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6818 Initial Notice: Qualification of ASEM as an additional assembly site for selected ATMEGA128x, ATMEGA165xx, ATMEGA169xx, ATMEGA64x, ATMEGA645xx, ATMEGA649xx, ATMEGA329xx, and ATMEGA325xx device families available in 64L VQFN (9x9x1mm) package.

Affected CPNs:

[MFOL-25LWZY479_Affected_CPN_01262024.pdf](#)

[MFOL-25LWZY479_Affected_CPN_01262024.csv](#)

Notification Text:

PCN Status:Initial 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 ASEM as an additional assembly site for selected ATMEGA128x, ATMEGA165xx, ATMEGA169xx, ATMEGA64x, ATMEGA645xx, ATMEGA649xx, ATMEGA329xx, and ATMEGA325xx device families available in 64L VQFN (9x9x1mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Group Chung-Li (ASCL)	ASE Group Chung-Li (ASCL)	ASE Group -Malaysia (ASEM)
Wire Material	Au, Cu, AuPd, CuPd	Au, Cu, AuPd, CuPd	Au [*] , CuPdAu ^{**}
Die Attach Material	EN-4900G, EN-4900GC	EN-4900G, EN-4900GC	CRM1076DS
Molding Compound Material	G700LA	G700LA	EMEG770HCD
Lead-Frame Material	C194	C194	C194FH

Note^{*} : Au wire material affects parts with 35.4k wafer technology

Note^{**} : CuPdAu wire material affects parts with 35.5k wafer technology

Impacts to Data Sheet:None

Change Impact:None

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

Change Implementation Status:In Progress

Estimated Qualification Completion Date:July 2024

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	January 2024						July 2024				
Workweek	0 1	0 2	0 3	0 4	0 5	>	2 7	2 8	2 9	3 0	3 1
Initial PCN Issue Date				x							
Qual Report Availability									x		
Final PCN Issue Date									x		

Method to Identify Change:Traceability code

Qualification Plan:Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History:January 26, 2024: Issued initial 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_MFOL-25LWZY479_Pre and Post Change Summary.pdf](#)

[PCN_MFOL-25LWZY479_Qual Plan.pdf](#)

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

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our [PCN home page](#) select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the [PCN FAQ](#) section.

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.

Affected Catalog Part Numbers (CPN)

ATMEGA165PA-MU
ATMEGA165A-MU
ATMEGA169PA-MU
ATMEGA169A-MU
ATMEGA165PA-MN
ATMEGA169PA-MN
ATMEGA169PA-MNR
ATMEGA165PA-MNR
ATMEGA165PA-MUR
ATMEGA165A-MUR
ATMEGA169A-MUR
ATMEGA169PA-MUR
ATMEGA64A-MU
ATMEGA64-16MU
ATMEGA64L-8MU
ATMEGA64A-MUR
ATMEGA64-16MUR
ATMEGA64L-8MUR
ATMEGA64A-MN
ATMEGA325P-20MU
ATMEGA329PV-10MN
ATMEGA329P-20MN
ATMEGA329P-20MNR
ATMEGA329PV-10MU
ATMEGA329P-20MU
ATMEGA329P-20MUR
ATMEGA329PV-10MUR
ATMEGA165P-16MU
ATMEGA165P-16MN
ATMEGA165P-16MNR
ATMEGA165P-16MUR
ATMEGA645-16MUR
ATMEGA325PV-10MU
ATMEGA325PV-10MUR
ATMEGA329PA-MU
ATMEGA325A-MU
ATMEGA325PA-MU
ATMEGA325A-MN
ATMEGA325A-MNR
ATMEGA329PA-MUR
ATMEGA325A-MUR
ATMEGA325PA-MUR
ATMEGA128-16MU
ATMEGA128A-MU
ATMEGA128L-8MU
ATMEGA128A-MUR

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ATMEGA128L-8MUR

ATMEGA128-16MUR

ATMEGA128L-8MUA5

ATMEGA128L-8MURA3

ATMEGA128-16MURA3

ATMEGA645P-MU

ATMEGA649A-MU

ATMEGA645A-MU

ATMEGA649A-MUR

ATMEGA645P-MUR

ATMEGA645A-MUR

ATMEGA649P-MU

ATMEGA649P-MUR

ATMEGA329A-MU

ATMEGA169PV-8MURA1

ATMEGA64L-8MQA5

ATMEGA128L-8MN

ATMEGA128A-MN

ATMEGA128-16MN

ATMEGA128-16MNR

ATMEGA128L-8MNR

ATMEGA128A-MNR

ATMEGA649-16MU

ATMEGA645V-8MU

ATMEGA645V-8MUR

ATMEGA649-16MUR

ATMEGA329V-8MU

ATMEGA329-16MU

ATMEGA325-16MU

ATMEGA325V-8MU

ATMEGA329V-8MUR

ATMEGA329-16MUR

ATMEGA325-16MUR

ATMEGA325V-8MUR

ATMEGA649V-8MU

ATMEGA645-16MU

ATMEGA649V-8MUR

ATMEGA169P-16MU

ATMEGA169PV-8MU

ATMEGA165PV-8MU

ATMEGA169P-16MUR

ATMEGA169PV-8MUR

ATMEGA165PV-8MUR

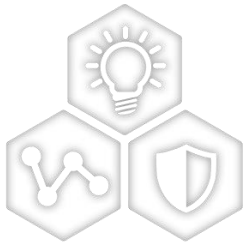
ATMEGA64L-8MQ

ATMEGA64L-8MQR

CCB 6818
PCN ID#: MFOL-25LWZY479



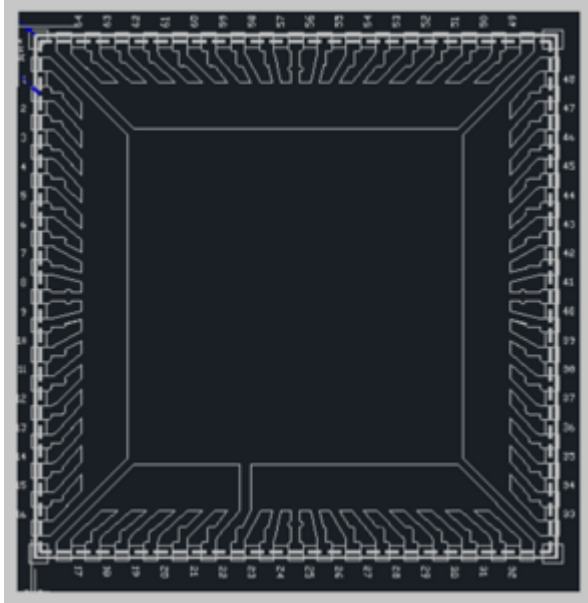
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SMART | CONNECTED | SECURE

Pre and Post Summary – Leadframe Comparison

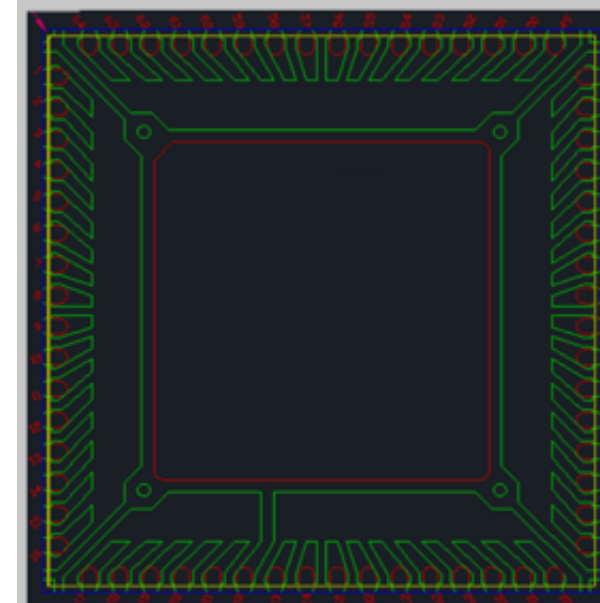
ASCL



Leadframe Material

C194

ASEM



Leadframe Material

C194FH

Note: Not to scale



MICROCHIP
QUALIFICATION PLAN SUMMARY

PCN #: MFOL-25LWZY479

Date:
January 18, 2024

Qualification of ASEM as an additional assembly site for selected ATMEGA128x, ATMEGA165xx, ATMEGA169xx, ATMEGA64x, ATMEGA645xx, ATMEGA649xx, ATMEGA329xx, and ATMEGA325xx device families available in 64L VQFN (9x9x1mm) package.

Purpose: Qualification of ASEM as an additional assembly site for selected ATMEGA128x, ATMEGA165xx, ATMEGA169xx, ATMEGA64x, ATMEGA645xx, ATMEGA649xx, ATMEGA329xx, and ATMEGA325xx device families available in 64L VQFN (9x9x1mm) package.

CCB No. 6818

Misc.	Assembly site	ASEM
	BD Number	BD-002128-01
	MP Code (MPC)	355597TEBC03
	Part Number (CPN)	ATMEGA645V-8MU
	MSL information	MSL1
	Assembly Shipping Media (T/R, Tube/Tray)	Tray
	Base Quantity Multiple (BQM)	260
	Reliability Site	MPHIL
Lead-Frame	Paddle size	228 X 228 mils (5.8 x 5.8mm)
	Material	C194FH
	DAP Surface Prep	Ring Ag plating
	Treatment	Roughened
	Process	Etched
	Lead-lock	Yes
	Part Number	170064226135UHD
	Lead Plating	Matte Sn
	Strip Size	258 x 78mm
	Strip Density	182 units/strip
Bond Wire	Material	CuPdAu
Die Attach	Part Number	CRM1076DS
	Conductive	Yes
MC	Part Number	EMEG770HCD
PKG	Package Type	VQFN
	Pin/Ball Count	64
	PKG width/size	9x9x1mm

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL test site	Special Instruction
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5			Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability-SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5			30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5			30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5			
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5			
Preconditioning - Required for surface mount devices	JESD22-A113. +150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at +25°C. MSL1/260	231	15	3	738	0	15	ASCL	MPHIL	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	JESD22-A110. +130°C/85% RH for 96 hours or 110°C/85%RH for 264 hours. Electrical test pre and post stress at +25°C and hot temp (85°C).	77	5	3	246	0	10	ASCL	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL test site	Special Instruction
UHAST	JESD22-A118. +130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs. Electrical test pre and post stress at +25°C	77	5	3	246	0	10	ASCL	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	JESD22-A104. -65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp (85°C); 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	ASCL	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.