



Product Change Notification / JAON-14MTDX268

Date:

13-Jan-2021

Product Category:

8-bit Microcontrollers, Capacitive Touch Sensors, Touchscreen Controllers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4492 Initial Notice: Qualification of NSEB as a new assembly site for selected Atmel products available in 28L VQFN (4X4X1mm) package with MSL 1 classification.

Affected CPNs:

[JAON-14MTDX268_Affected_CPN_01132021.pdf](#)

[JAON-14MTDX268_Affected_CPN_01132021.csv](#)

Notification Text:

PCN Status: Initial notification

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the icons found in the Affected CPNs section above.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change: Qualification of NSEB as a new assembly site for selected Atmel products available in 28L VQFN (4X4X1mm) package with MSL 1 classification.

Pre Change:

Assembled at ASKR assembly site using palladium coated copper (PdCu) bond wire or gold (Au) bond wire, EN-4900GC die attach material, with PPF or Matte Sn lead plating finish, Ring plating DAP Surface Prep, without lead-lock lead frame and MSL 1 / MSL 3 classification.

Post Change:

Assembled at NSEB assembly site using palladium coated copper with gold flash (CuPdAu) bond wire, 8600 die attach material with Matte Sn lead plating finish, Ag on lead only DAP Surface Prep and with lead-lock lead frame and MSL 1 classification.

Pre and Post Change Summary:

	Pre Change		Post Change
Assembly Site	ASE Korea Inc. (ASKR)		UTAC Thai Limited (NSEB)
Wire material	PdCu	Au	CuPdAu
Die attach material	EN-4900GC		8600
Molding compound material	G700		G700
Lead frame material	C194		C194
Lead Frame Lead Lock	No		Yes
Lead Plating Finish	Matte Sn	PPF	Matte Sn
Lead Frame DAP Surface Prep	Ring plating		Ag on lead only
MSL Classification	MSL 1	MSL 3	MSL 1

Impacts to Data Sheet: None

Change Impact:None

Reason for Change:To improve productivity by qualifying NSEB as a new assembly site.

Change Implementation Status:In Progress

Estimated Qualification Completion Date:July 2021

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:

Workweek	January 2021					-->	July 2021				
	01	02	03	04	05		27	28	29	30	31
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 13, 2021: 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_JAON-14MTDX268_Qual_Plan.pdf](#)

[PCN_JAON-14MTDX268_Pre and Post Change_Summary.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)

ATTINY88-MMU
ATTINY88-MMH
ATTINY88-MMUR
ATTINY88-MMHR
AT42QT20C07-MMU
ATTINY48-MMU
ATTINY48-MMH
ATTINY48-MMUR
ATTINY48-MMHR
ATMEGA88PA-MMH
ATMEGA88A-MMH
ATMEGA88PA-MMN
ATMEGA88PA-MMNR
ATMEGA88PA-MMUR
ATMEGA88PA-MMHR
ATMEGA88A-MMHR
ATMEGA168PA-MMH
ATMEGA168A-MMH
ATMEGA168PA-MMHR
ATMEGA168A-MMHR
ATMEGA48PA-MMH
ATMEGA48A-MMH
ATMEGA48PA-MMN
ATMEGA48PA-MMNR
ATMEGA48PA-MMHR
ATMEGA48A-MMHR
ATMEGA48P-20MMU
ATMEGA48PV-10MMU
ATMEGA48P-20MMUR
ATMEGA48PV-10MMUR
ATMEGA48V-10MMU
ATMEGA48-20MMU
ATMEGA48V-10MMH
ATMEGA48-20MMH
AT42QT2160-MMUR
AT42QT1060-MMUR
ATMEGA48V-10MMUR
ATMXTS200-MMU020
ATMXTS200-MMU022
ATMXTS200-MMUR020
ATMXTS200-MMUR022
ATMXTS220-MMU020
ATMXTS220-MMU021
ATMXTS220-MMUR020
ATMXTS220-MMUR021

CCB 4492
Pre and Post Change Summary
PCN# JAON-14MTDX268



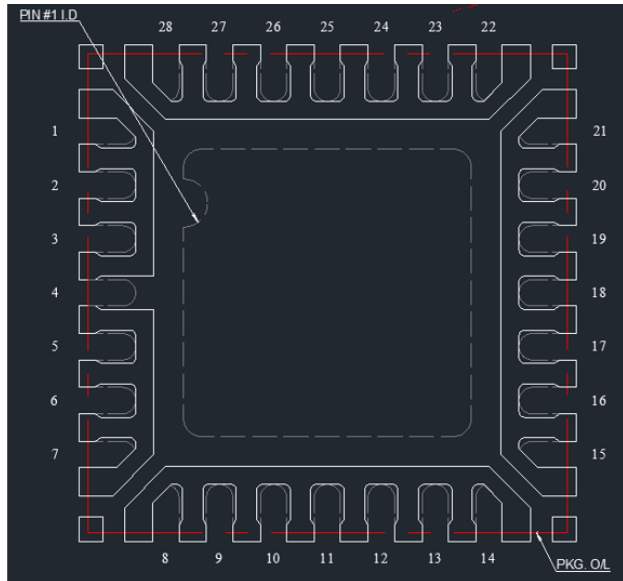
A Leading Provider of Smart, Connected and Secure Embedded Control Solutions



SMART | CONNECTED | SECURE

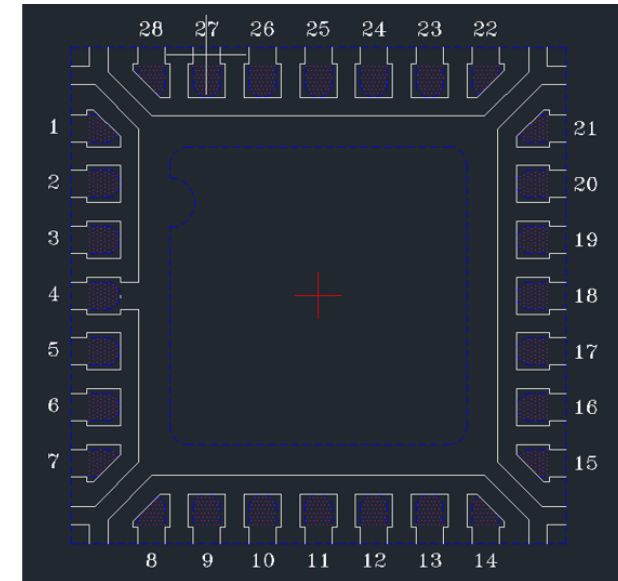
Lead frame Comparison

Pre Change ASKR



Lead-lock	No
DAP Surface Prep	Ring Plating

Post Change NSEB



Lead-lock	Yes
DAP Surface Prep	Ag in lead only



MICROCHIP

QUALIFICATION PLAN SUMMARY

PCN #: JAON-14MTDX268

Date:

December 10, 2020

Qualification of NSEB as a new assembly site for selected Atmel products available in 28L VQFN (4X4X1mm) package with MSL 1 classification.

Purpose: Qualification of NSEB as a new assembly site for selected Atmel products available in 28L VQFN (4X4X1mm) package with MSL 1 classification.

CCB No.: 4492

<u>Misc.</u>	Assembly site	NSEB
	BD Number	D-023174
	MP Code (MPC)	35465TRPBC03
	Part Number (CPN)	ATMEGA88PA-MMHR
	MSL information	1
	Assembly Shipping Media (T/R, Tube/Tray)	Tray 1NA-0404-B13
	Base Quantity Multiple (BQM)	490/6000
	Reliability Site	MPHIL
<u>Lead-Frame</u>	Paddle size	114 x 114
	Material	C194
	DAP Surface Prep	Ag on lead only
	Treatment	None
	Process	Etched
	Lead-lock	Yes
	Part Number	FR1640
	Lead Plating	Matte Sn
	Strip Size	70x250 mm
	Strip Density	700 units/strip
<u>Bond Wire</u>	Material	CuPdAu
<u>Die Attach</u>	Part Number	8600
	Conductive	Yes
<u>MC</u>	Part Number	G700
<u>PKG</u>	PKG Type	VQFN
	Pin/Ball Count	28L
	PKG width/size	4X4X1mm

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	Pkg. Type	Special Instructions
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	ASEKR	MPHIL	28LVQFN	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	ASEKR	MPHIL	28LVQFN	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5		5	ASEKR	MPHIL	28LVQFN	30 bonds from a min. 5 devices.
Wire Sweep								ASEKR	MPHIL	28LVQFN	Required for any reduction in wire bond thickness.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30		5	ASEKR	MPHIL	28LVQFN	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	ASEKR	MPHIL	28LVQFN	
Preconditioning - Required for surface mount devices	+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 hot temp (85°C). MSL1 / 260c	231	15	3	738	0	15	ASEKR	MPHIL	28LVQFN	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.

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	Pkg. Type	Special Instructions
UHAST	+130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs. Electrical test pre and post hot temp (85°C).	77	5	3	246	0	10	ASEKR	MPHIL	28LVQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-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	ASEKR	MPHIL	28LVQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.