



Product Change Notification / NTDO-13QSSF734

Date:

29-Mar-2023

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6186 Initial Notice: Qualification of MP3A as an additional assembly site for ATMEGA48PA/88PA/168PA, ATTINY261A/461A/861A, ATTINY48/88 and ATMEGA328P device families available in 32L VQFN (5x5x0.9mm) package using CuPdAu bond wire material.

Affected CPNs:

[NTDO-13QSSF734_Affected_CPN_03292023.pdf](#)

[NTDO-13QSSF734_Affected_CPN_03292023.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 MP3A as an additional assembly site for ATMEGA48PA/88PA/168PA, ATTINY261A/461A/861A, ATTINY48/88 and ATMEGA328P device families available in 32L VQFN (5x5x0.9mm) package using CuPdAu bond wire material.

Pre and Post Change Summary:

	Pre Change		Post Change		
Assembly Site	Microchip Technology Thailand (HQ) (MTAI)	Microchip Technology Thailand (Branch) (MMT)	Microchip Technology Thailand (HQ) (MTAI)	Microchip Technology Thailand (Branch) (MMT)	Microchip Technology Inc. (MPHIL-3) (MP3A)
Wire Material	Au	Au	Au	Au	CuPdAu
Die Attach Material	3280	3280	3280	3280	3280
Molding Compound Material	G700LTD	G700LTD	G700LTD	G700LTD	G700LTD
Lead-Frame Material	C194	C194	C194	C194	C194
Lead-Frame Paddle Size	150x150 mils	150x150 mils	150x150 mils	150x150 mils	150x150 mils
DAP Surface Prep	Bare Cu	Bare Cu	Bare Cu	Bare Cu	Bare Cu

Impacts to Data Sheet:None

Change Impact:None

Reason for Change:To improve productivity by qualifying MP3A as an additional assembly site.

Change Implementation Status:In Progress

Estimated Qualification Completion Date:June 2023

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:

	March 2023					>	June 2023				
Workweek	9	1	1	1	1		2	2	2	2	2

		0	1	2	3		2	3	4	5	6
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:March 19, 2023: Issued initial notice.

March 29, 2023: Removed duplicates in NTDO-13QSSF734_Affected_CPN.

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

Attachments:

[PCN_NTDO-13QSSF734_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.

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Affected Catalog Part Numbers (CPN)

ATTINY88-MU
ATTINY88-MUR
ATTINY261A-MU
ATTINY261A-MN
ATTINY261A-MNR
ATTINY261A-MUR
ATTINY48-MU
ATTINY48-MUR
ATMEGA88PA-MU
ATMEGA88PA-MUR
ATMEGA168PA-MU
ATMEGA168PA-MUR
ATTINY861A-MU
ATTINY861A-MUR
ATTINY461A-MU
ATTINY461A-MUR
ATMEGA328P-MU
ATMEGA328P-MUR
ATMEGA48PA-MU
ATMEGA48PA-MUR



QUALIFICATION PLAN SUMMARY

PCN#: NTDO-13QSSF734

March 1, 2023

**Qualification of MP3A as an additional assembly site
for ATMEGA48PA/88PA/168PA,
ATTINY261A/461A/861A, ATTINY48/88 and
ATMEGA328P device families available in 32L VQFN
(5x5x0.9mm) package using CuPdAu bond wire
material.**

Purpose: Qualification of MP3A as an additional assembly site for ATMEGA48PA/88PA/168PA, ATTINY261A/461A/861A, ATTINY48/88 and ATMEGA328P device families available in 32L VQFN (5x5x0.9mm) package using CuPdAu bond wire material.

CCB: 6186

<u>Misc.</u>	Assembly site	MP3A (MPHIL3)
	BD Number	BD-001295 /A
	MP Code (MPC)	354737RXBA01
	Part Number (CPN)	ATMEGA328P-MU
	MSL information	MSL-1/260
	Assembly Shipping Media (T/R, Tube/Tray)	Tray
	Base Quantity Multiple (BQM)	490
	Reliability Site	MPHIL
<u>Lead-Frame</u>	Paddle size	150x150 mils
	Material	C194
	DAP Surface Prep	Bare Cu
	Treatment	BOT
	Process	Etched
	Lead-lock	Yes
	Part Number	10103202
	Lead Plating	Matte Tin
	Strip Size	250x70 mm
	Strip Density	440 units/strip
<u>Bond Wire</u>	Material	CuPdAu
	Wire Diameter	0.8
<u>Die Attach</u>	Part Number	3280
	Conductive	Yes
<u>MC</u>	Part Number	G700LTD
<u>PKG</u>	PKG Type	VQFN
	Pin/Ball Count	32
	PKG width/size	5x5x1.0mm

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	Special Instructions
Standard Pb-free Solderability	J-STD-002 ; 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	4	20	0	5	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	4	20	0	5	30 bonds from a minimum of 5 devices.
Wire Sweep		5	0	4	20	0		Required for any reduction in wire bond thickness.
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	+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. MSL-1/260C	231	15	4	984	0	15	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.
HAST	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp 85C.	77	5	4	328	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Unbiased HAST	+130°C/85% RH for 96 hrs. Electrical test pre and post stress at +25°C.	77	5	4	328	0	10	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 85C; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	4	328	0	15	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.