Product Change Notification / CENO-12WSDS278

Date:

14-Mar-2023

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6185 Initial Notice: Qualification of MP3A as an additional assembly site for ATTINY48/88, ATTINY261A/461A/861A, ATMEGA48PA/88PA/168PA and ATMEGA328P device families available in 32L VQFN (5x5x0.9mm) package.

Affected CPNs:

CENO-12WSDS278_Affected_CPN_03142023.pdf
CENO-12WSDS278_Affected_CPN_03142023.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 ATTINY48/88, ATTINY261A/461A/861A, ATMEGA48PA/88PA/168PA and ATMEGA328P device families available in 32L VQFN (5x5x0.9mm) package.

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	Au
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	10	11	12	13		22	23	24	25	26
Initial PCN Issue			x								

Date											
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 14, 2023: 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_CENO-12WSDS278_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)

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 #: CENO-12WSDS278

Date:

March 1, 2023

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

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

CCB No.: 6185

Misc.	**Assembly site**	MP3A (MPHIL3)
	BD Number	BD-001294 /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
Lead-Frame	**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
Bond Wire	**Material**	Au
Die Attach	**Part Number**	3280
	Conductive	Yes
MC	**Part Number**	G700LTD
PKG	**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	Test Site	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	MPHIL	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	3	15	0 fails after TC	5	MPHIL	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	3	15		5	MPHIL	30 bonds from a minimum of 5 devices.
Wire Sweep		5	0	3	15	0		MPHIL	Required for any reduction in wire bond thickness.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	MPHIL	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	MPHIL	

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	Test Site	Special Instructions
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	15 +5	3	738+ 45	0	15	MPHIL	Spares should be properly identified.
HAST	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp 85C.	77	5	3	246	0	10	MPHIL	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	3	246	0	10	MPHIL	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	3	246	0	15	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.