Product Change Notification / ASER-19HIWO872

Date:

28-Oct-2022

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4748 Final Notice: Qualification of MTAI as an additional assembly site for selected ATMEGA324PBxxx and PIC16F1xxx device families available in 44L TQFP (10x10x1mm) package.

Affected CPNs:

ASER-19HIWO872_Affected_CPN_10282022.pdf
ASER-19HIWO872_Affected_CPN_10282022.csv

Notification Text:

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 MTAI as an additional assembly site for selected ATMEGA324PBxxx and PIC16F1xxx device families available in 44L TQFP (10x10x1mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site		ASE Group Chung-Li (ASCL)	ASE Group Chung-Li (ASCL)	Microchip Technology Thailand (MTAI)
Moisture Sensitivity Level (MSL)		MSL3	MSL3	MSL1
Shipping Media	**Tray**	Blue Bakeable	Blue Bakeable	Dark Blue Non-bakeable
	T/R	No Change	No Change	No Change
Wire Material		Au/CuPdAu	Au/CuPdAu	Au
Die Attach Material		EN-4900GC	EN-4900GC	3280
Molding Compound Material		G700	G700	G700
Lead Frame	**Material**	EFECT64	EFECT64	C7025
	Paddle Size	205 x 205 mils	205 x 205 mils	180 x 180 mils
	DAP Surface Prep	Ag ring plate	Ag ring plate	Bare Copper
	See Pre and Post Change Summary for Lead Frame comparison.			

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying MTAI as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: November 10, 2022 (date code: 2246)

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

Time Table Summary:

	August 2021					**>**	**October 2022**					**November 2022**				
Workweek	32	33	34	36	36		40	41	42	43	44	45	46	47	48	49
Initial PCN Issue Date				x												
Qual Report Availability											x					
Final PCN Issue											x					

Date																
Estimated Implementation Date													x			

Method to Identify Change: Traceability code

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

Revision History: August 26, 2021: Issued initial notification.

March 29, 2022: Issued final notification. Provided estimated first ship date to be on April 29, 2022.

September 30, 2022: Re-issued final notification. Updated wire material for ASCL assembly site to add CuPdAu bond wire. Updated affected part list to remove catalog part numbers ATMEGA324PB-AN, ATMEGA324PB-ABT and add CPN PIC16F18075-I/P based on the updated scope. Updated subject notification, reason for change and qual title accordingly.

October 28, 2022: Re-issued final notification with qual report. Updated Estimated Implementation and Estimated First Ship date to November 10, 2022.

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

Attachments:

PCN_ASER-19HIWO872_Qual Report.pdf
PCN_ASER-19HIWO872_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.

CCB 4748
Pre and Post Change Summary
PCN #: ASER-19HIWO872

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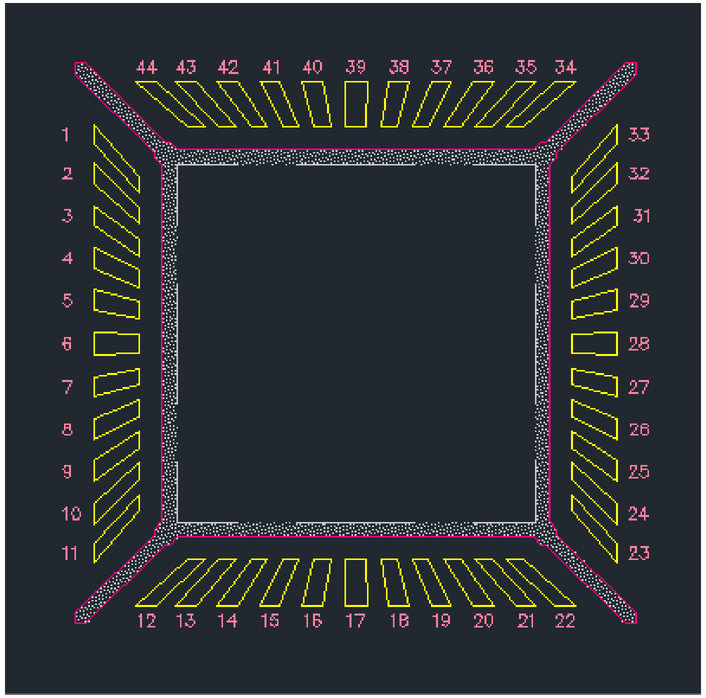
SMART | CONNECTED | SECURE

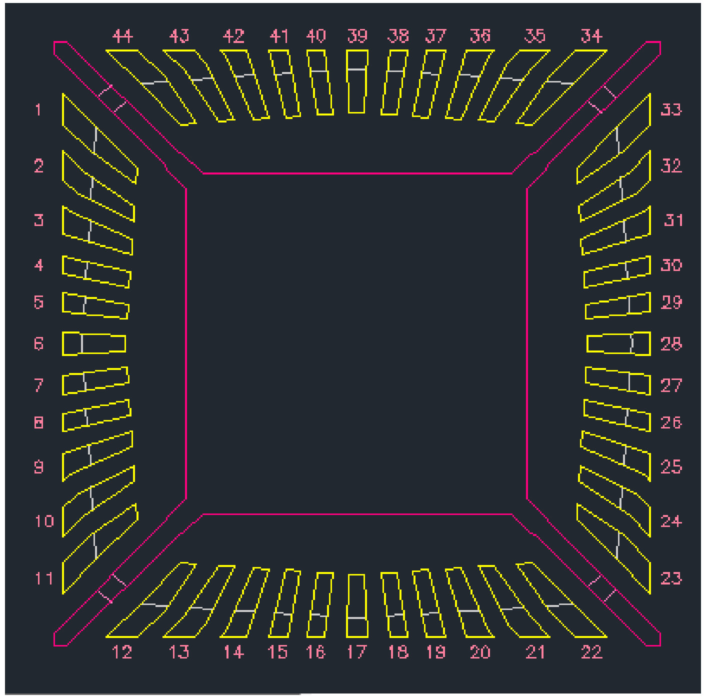
Lead Frame Comparison

ASCL



Material	EFECT64
Paddle Size	205 x 205 mils
DAP Surface Prep	Ag ring plate

MTAI



Material	C7025
Paddle Size	180 x 180 mils
DAP Surface Prep	Bare copper

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QUALIFICATION REPORT SUMMARY

PCN #: ASER-19HIWO872

Date:
October 10, 2022

Qualification of MTAI as an additional assembly site for selected ATMEGA324PBxxx and PIC16F1xxx device families available in 44L TQFP (10x10x1mm) package. This is a Q100 grade 1 qualification.

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Package Qualification Report

Purpose: Qualification of MTAI as an additional assembly site for selected ATMEGA324PBxxx and PIC16F1xxx device families available in 44L TQFP (10x10x1mm) package. This is a Q100 grade 1 qualification.

CCB: 4748

Misc.	Assembly site	MTAI
	BD Number	BDM-002935 rev.A
	MP Code (MPC)	59B18FT4XVA1
	Part Number (CPN)	ATMEGA324PB-ABTVAO
	Qual ID	R2100926 Rev A
Lead-Frame	Paddle size	180 x 180 mils
	Material	C7025
	DAP Surface Prep	Bare Copper
	Treatment	Yes
	Process	Stamped
	Lead-lock	No
	Part Number	10104404
	Lead Plating	Matte Tin
Bond Wire	Material	Au
Die Attach	Part Number	3280
	Conductive	Yes
MC	Part Number	G700
PKG	PKG Type	TQFP
	Pin/Ball Count	44
	PKG width/size	10x10x1.0 mm

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Package Qualification Report

Manufacturing Information

Assembly Lot No.	MPC	Package
MTAI230200790.000	59B18FT4XVA1	44TQFP
MTAI221501001.000	59B18FT4XVA1	44TQFP
MTAI221501002.000	59B18FT4XVA1	44TQFP
MTAI221401453.000	59B18FT4XVA1	44TQFP

☒ **Pass** ☐ **Fail** ☐ ____________________

59B18 in 44L TQFP 10x10 package using Au wire at MTAI is Passed at the Moisture/ Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard and passed AECQ100 Grade 1. All stresses Passed including HAST, Unbiased HAST, Temperature Cycling and HTSL.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests **MSL-1 @ 260C**	**Electrical Test :** +25°C	JESD22-A113,	693(0)			Good Devices
	External Visual Inspection System: Luxo Lamp	JIP/ IPC/JEDEC J-STD-020E	693(0)	0/693	Pass	
	Bake 150°C, 24 hrs System: HERAEUS		693(0)			
	Moisture Soak 85°C/85%RH Moisture Soak 168hrs. System: Climats Excal 5423-HE		693(0)			
	Reflow 3x Convection-Reflow 260°C max System: Mancorp CR.5000F		693(0)	0/693		
	Electrical Test : +25°C		693(0)	0/693	Pass	

Temp Cycle	**Stress Condition:** (Standard) -65°C to +150°C, 500 Cycles System: VOTSCH VT 7012 S2	JESD22-A104	231(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +125°C		231(0)	0/231	Pass	
	Bond Strength: Wire Pull Bond Shear		15(0)	0/15	Pass	
NBIASED-HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96H System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	231(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, +125°C		231(0)	0/231	Pass	
UNBIASED-HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96H System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	231(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C		231(0)	0/231	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 500 hrs System: HERAEUS Taken from 1 lot with 45 units	JESD22-A103	45 (0)			
	Electrical Test : +25°C +125°C		45 (0)	0/45	Pass	
Solderability **Temp 245°C**	**Bake:** Temp 155°C,4Hrs System:Oven Solder Bath: Temp.245°C Taken from 1 lot with min 22 units	J-STD-002	22 (0)	0/22	Pass	Performed at MPHIL
Bond Strength **Data Assembly**	Wire Pull 3 lots, 35 wires per lot from 5 units min	M2011.8 MIL-STD-883	35(0)	0/35	Pass	
Bond Strength **Data Assembly**	Bond Shear 3 lots, 35 bonds per lot from 5 units min	M2011.8 MIL-STD-883	35(0)	0/35	Pass	

ASER-19HIWO872 - CCB 4748 Final Notice: Qualification of MTAI as an additional assembly site for selected ATM

Affected Catalog Part Numbers(CPN)

ATMEGA324PB-ANR
ATMEGA324PB-AUR
PIC16F15274-E/PT
PIC16F15275-E/PT
PIC16F15276-E/PT
PIC16F15274-I/PT020
PIC16F15274-I/PT
PIC16F15275-I/PT
PIC16F15276-I/PT
PIC16F18075-I/PT
ATMEGA324PB-AU
ATMEGA324PB-AN
ATMEGA324PB-ABTVAO