Product Change Notification / ALAN-05WOJS872

Date:

17-Aug-2021

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3012.002 Final Notice: Qualification of MMT as an additional assembly site for selected Atmel ATTINY102 device family available in 8L SOIC (150mils) package.

Affected CPNs:

ALAN-05WOJS872_Affected_CPN_08172021.pdf
ALAN-05WOJS872_Affected_CPN_08172021.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 MMT as an additional assembly site for selected Atmel ATTINY102 device family available in 8L SOIC (150mils) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Location		Lingsen Precision Industries, Limited (LPI)	Lingsen Precision Industries, Limited (LPI)	Microchip Technology Thailand (MMT)
Bond Wire Material		CuPdAu	CuPdAu	Au
Die Attach material		CRM-1033BF	CRM-1033BF	8390A
Mold compound material		G600	G600	G600
Lead Frame	Material	C194*	C194*	CDA194*
	Lead-lock	No	No	Yes
	See pre and post change comparison			

Note: * A914, C194 and CDA194 Lead frame material are the same, it is just a MCHP internal labelling difference.

Impacts to Data Sheet: None

Change Impact: None

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

Change Implementation Status: In Progress

Estimated First Ship Date: September 5, 2021 (date code: 2137)

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

Time Table Summary:

	August 2021				September 2021				
Workweek	32	33	34	35	36	37	38	39	40
Qual Report Availability			X						
Final PCN Issue Date			X						

Estimated First Ship 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 16, 2021: Issued final 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_ALAN-05WOJS872_Pre and Post Change_Summary.pdf
PCN_ALAN-05WOJS872_Qual Report.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)

ATTINY102-SSF
ATTINY102F-SSF
ATTINY102-SSN
ATTINY102F-SSN
ATTINY102-SSNR
ATTINY102F-SSNR
ATTINY102-SSFR
ATTINY102F-SSFR

CCB 3012.002
Pre and Post Change Summary
PCN# ALAN-05WOJS872

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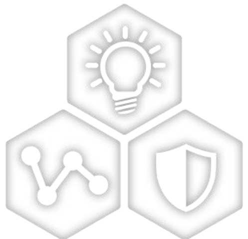
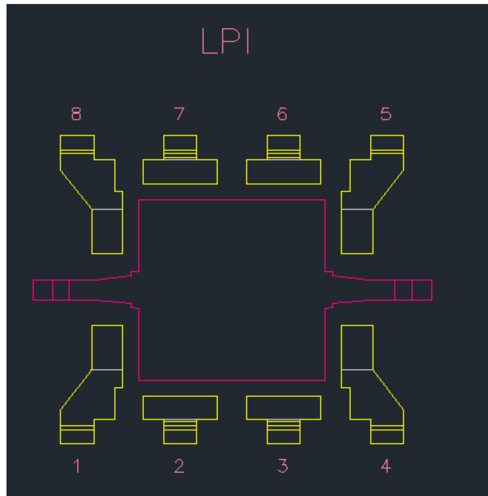
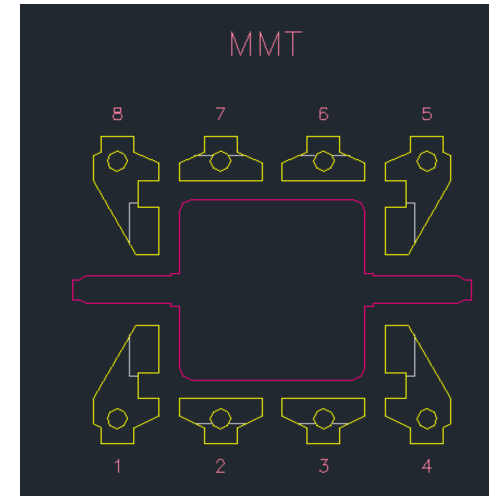


Pre and Post Change Summary

Pre Change	Post Change
	

Pre Change

Assembly Location		Lingsen Precision Industries, Limited (LPI)
Bond Wire Material		CuPdAu
Die Attach material		CRM-1033BF
Mold compound material		G600
Lead-Frame	**Lead-lock**	No

Post Change

Assembly Location		Microchip Technology Thailand (MMT)
Bond Wire Material		Au
Die Attach material		8390A
Mold compound material		G600
Lead-Frame	**Lead-lock**	Yes

*Note: Mold compound material fills the lead lock hole, which provides improved protection against moisture penetration along the edge of the leads (pins) of the package."

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: ALAN-05WOJS872

Date:
August 01, 2017

Qualification of gold (Au) bond wire as secondary wire material for selected Atmel devices available in 14L SOIC package at MMT assembly site. The qualification of MMT as an additional assembly site for selected Atmel ATTINY102 device family available in 8L SOIC (150mils) package will qualify by similarity (QBS)

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of gold (Au) bond wire as secondary wire material for selected Atmel devices available in 14L SOIC package at MMT assembly site. The qualification of MMT as an additional assembly site for selected Atmel ATTINY102 device family available in 8L SOIC (150mils) package will qualify by similarity (QBS)
CN	ES104802-20959
QUAL ID	QTP3107 Rev. A
MP CODE	355B27D3XC03
Part No.	ATTINY84-20SSU
Bonding No.	BDM-001282 rev B
CCB#	3012 and 3012.002
<u>Package</u>	
Type	14L SOIC
Package size	150 mils
<u>Lead Frame</u>	
Paddle size	104x150 mils
Material	C194
Surface	Single Ring; Bare Cu on paddle
Process	Stamped
Lead Lock	No
Part Number	10101413
Treatment	BOT; Roughened Ag
<u>Material</u>	
Epoxy	8390A
Wire	Au
Mold Compound	G600
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-181100929.000	MCSO518010147.100	1723197
MMT-181100930.000	MCSO518010147.100	17231EE
MMT-181100931.000	MCSO518010147.100	17231C5

Result [X] Pass [ ] Fail [ ] ____________________

14L SOIC (.150”) assembled by MMT (ALPH) pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard.

PACKAGE QUALIFICATION REPORT

Test Number	Test Condition	Standard / Method	Qty. (Acc.)	Def/SS	Result	Remarks
Preconditio n Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test :**+85°C System: MT9320 Handler:0202	JESD22-A113	789(0)	789		Good Devices
	Bake 150°C, 24 hrs System: HERAEUS			789		
	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D		789		
	3x Convection-Reflow 265°C max System: Mancorp CR.5000F			789		
	Electrical Test :+85°C System: MT9320 Handler:0202			0/789	Passed	
Temp Cycle	**Stress Condition:** (Standard)65°C to +150°C, 500 Cycles System : VOTSCH VT 7012 S2	JESD22-A104		254		Parts had been pre-conditioned at 260°C
	Electrical Test: + 85°C System: MT9320 Handler:0202		254	0/254	Passed	
	Bond Strength: Wire Pull (> 2.50 grams) Bond *Shear (>15.00 grams)*		15(0)	0/15	Passed	
UNBIASED-HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8	JESD22-A118		240		Parts had beenpre-conditioned at 260°C
	Electrical Test: +85°C System: MT9320 Handler: 0202		240	0/240	Passed	
HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HIRAYAMA HASTEST PC-422R8	JESD22-A110		238		Parts had beenpre-conditioned at 260°C
	Electrical Test:+85°C System: MT9320 Handler:0202		238	0/238	Passed	

PACKAGE QUALIFICATION REPORT

Test Number	Test Condition	Standard / Method	Qty. (Acc.)	Def/SS	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: HERAEUS **Electrical Test :** +85°C System: MT9320 Handler:0202	JESD22-A103	50(0)	50 0/50	Pass	45 units
Solderability Temp 215°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B -102E	22 (0)	0/22		Performed at MTAI
Solderability Temp 245°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B -102E	22 (0)	0/22		Performed at MTAI
Bond Strength Data Assembly	Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)	M2011. MIL-STD-883	30 (0) Wires 30 (0) bonds	0/30 0/30		