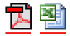
Product Change Notification - LIAL-27HWYL569

Date:
14 Jan 2019
Product Category:
8-bit Microcontrollers; Interface- Serial Peripherals
Affected CPNs:

Notification subject:
CCB 3529 and 3529.001 Final Notice: Qualification of 8390A die attach material for selected products of the 120K, 150K, 160K and 200K wafer technologies available in 28L and 20L SSOP package at MTAI assembly site.
Notification text:

PCN Status:
Final 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 8390A die attach material for selected products of the 120K, 150K, 160K and 200K wafer technologies available in 28L and 20L SSOP package at MTAI assembly site.

Pre Change:
Using 3280 die attach material.

Post Change:
Using 8390A die attach material

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Microchip Technology Thailand HQ (MTAI)	Microchip Technology Thailand HQ (MTAI)
Wire material	CuPdAu	CuPdAu
Die attach material	3280	8390A
Molding compound material	G600	G600
Lead frame material	CDA194	CDA194

Impacts to Data Sheet:
None

Change Impact:

None

Reason for Change:
To improve manufacturability by qualifying 8390A die attach material.

Change Implementation Status:
In Progress

Estimated First Ship Date:
February 14, 2019 (date code: 1907)

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

Time Table Summary:

	September 2018						January 2019					February 2019			
Workweek	35	36	37	38	39	->	01	02	03	04	05	06	07	08	09
Initial PCN Issue Date			X												
Qual Report Availability									X						
Final PCN Issue Date									X						
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:
September 12, 2018: Issued initial notification.
January 14, 2019: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on February 14, 2019.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.
Attachment(s):
PCN_LIAL-27HWYL569_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)

HA0140-I/SS
HA0140T-I/SS
HA4768-I/SS
HA4768T-I/SS
MCP23008-E/SS
MCP23008T-E/SS
MCP23009-E/SS
MCP23009T-E/SS
MCP23017-E/SS
MCP23017T-E/SS
MCP23S08-E/SS
MCP23S08-E/SSAPL
MCP23S08T-E/SS
MCP23S08T-E/SSAPL
MCP23S17-E/SS
MCP23S17T-E/SS
PIC16C54C-04/SS
PIC16C54C-04E/SS
PIC16C54C-04I/SS
PIC16C54C-20/SS
PIC16C54C-20E/SS
PIC16C54C-20I/SS
PIC16C54CT-04I/SS
PIC16C54CT-20/SS
PIC16F1507-E/SS
PIC16F1507-I/SS
PIC16F1507T-E/SS
PIC16F1507T-I/SS
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PIC16F57-I/SS

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PIC16F716T-I/SS070
PIC16F716T-I/SS071
PIC16F716T-I/SS072
PIC16F716T-I/SSC10
PIC16F720-E/SS
PIC16F720-I/SS
PIC16F720T-I/SS
PIC16F721-E/SS
PIC16F721-I/SS
PIC16F721T-I/SS
PIC16F721T-I/SS020
PIC16F722A-E/SS
PIC16F722A-I/SS
PIC16F722A-I/SS023
PIC16F722AT-E/SS
PIC16F722AT-I/SS
PIC16F722AT-I/SS020
PIC16F722AT-I/SS021
PIC16F722AT-I/SS022
PIC16F722AT-I/SS024
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PIC16F723A-I/SS
PIC16F723AT-E/SS
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PIC16LF1507T-I/SS020

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PIC16LF1903-E/SS
PIC16LF1903-I/SS
PIC16LF1903T-I/SS
PIC16LF720-E/SS
PIC16LF720-I/SS
PIC16LF720T-I/SS
PIC16LF721-E/SS
PIC16LF721-I/SS
PIC16LF721T-I/SS
PIC16LF722A-E/SS
PIC16LF722A-I/SS
PIC16LF722AT-I/SS
PIC16LF723A-E/SS
PIC16LF723A-I/SS
PIC16LF723A-I/SS021
PIC16LF723A-I/SSC01
PIC16LF723A-I/SSC02
PIC16LF723AT-I/SS
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PIC16LF723AT-I/SS026
PIC16LF723AT-I/SS027
PIC16LF723AT-I/SSC02

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: LIAL-27HWYL569

Date
December 21,2018

Qualification of 8390A die attach material for selected products of the 120K, 150K, 160K and 200K wafer technologies available in 28L and 20L SSOP package at MTAI assembly site.

PACKAGE QUALIFICATION REPORT

Purpose: Qualification of 8390A die attach material for selected products of the 120K, 150K, 160K and 200K wafer technologies available in 28L and 20L SSOP package at MTAI assembly site.

CCB No.: 3529 and 3529.001

QUAL ID#: Q18103

Revision: A

CN: ES204802

MP CODE#: LEAN17N2XB04

Part #: PIC16F723A-I/SS

Bonding No.: BDM-001842 Rev. A

<u>Package</u>

Type: 28L SSOP

Package size: 209 mils

Die thickness: 15 mils

Die size: 73.4 x 70.0 mils

<u>Lead Frame</u>

Paddle size: 153 x 200 mils

Material: CDA194

Surface: Bare Cu

Process Stamped Lead Lock: No

Part Number: 10102834

Treatment: Brown oxide treatment

<u>Material</u>

Epoxy: 8390A

Wire: CuPdAu

Mold Compound: G600

Plating Composition: Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI191003216.000	TMPE218354432.221	1823KQU
MTAI191003948.000	TMPE218354432.221	1823QDC
MTAI191003949.000	TMPE218354432.221	1823QE1

Result: [X] Pass [ ] Fail [ ] ______________________

28L SSOP (.209”) assembled by MTAI pass reliability test per QCI-39000.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 (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020D)	IPC/JEDEC J-STD020D	135	0/135	Passed	
<u>Precondition Prior Perform Reliability Tests</u> **(At MSL Level 1)**	**Electrical Test :**+25°C and 125°C System: J750 Bake 150°C, 24 hrs System: CHINEE 85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 **Electrical Test :**+25°C and 125°C System: J750	JESD22A113	693(0)	693 693 693 693 0/693	Passed	Good Devices
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H **Electrical Test:** +125°C, System: J750 **Stress Condition:** -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H **Electrical Test:** + 125°C System: J750	JESD22A104	231(0) 231 (0)	231 0/231 231 0/231	Passed Passed	Parts had been pre-conditioned at 260°C 77 units / lot
	Bond Strength: Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)		15(0) 15(0)	0/15 0/15	Passed Passed	
UNBIASEDHAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X **Electrical Test:** +25°C System: J750 **Stress Condition:**	JESD22-A118	231(0)	231 0/231 231	Passed	Parts had been pre-conditioned at 260°C 77 units / lot

	+130°C/85%RH, 192 hrs. System: HAST 6000X **Electrical Test:** + 25°C System J750		231(0)	0/231	Passed	
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X **Electrical Test:** + 25°C ,85°C and 125°C System: J750 **Stress Condition:** +130°C/85%RH,192 hrs.**Bias Volt:** 5.5 Volts System: HAST 6000X **Electrical Test:** + 25°C ,85°C and 125°C System: J750	JESD22-A110	231(0) 231(0)	231 0/231 231 0/231	Passed Passed	Parts had been pre-conditioned at 260°C 77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB **Electrical Test:** +25°C and 125°C System: J750	JESD22A103	45(0)	45 45(0)	Passed	45 units
Bond Strength **Data Assembly**	Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	M2011 JESD22B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Passed Passed	