Product Change Notification / LIAL-23USLU235

Date:

13-Feb-2021

Product Category:

8-bit Microcontrollers, Interface- Controller Area Network (CAN), Interface- Serial Peripherals

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3979 and 3979.001 Final Notice: Qualification of QMI-519 die attach material for selected products available in 28L SOIC (.300in) and 18L SOIC (.300in) packages at MTAI assembly site.

Affected CPNs:

LIAL-23USLU235_Affected_CPN_02132021.pdf
LIAL-23USLU235_Affected_CPN_02132021.csv

Notification Text:

PCN Status: Final notification.

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the attachments found in the Affected CPNs section.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .csv).

Description of Change: Qualification of QMI-519 die attach material for selected products available in 28L SOIC (.300in) and 18L SOIC (.300in) packages at MTAI assembly site.

Pre Change:
Using 3280 die attach material

Post Change:

Using QMI-519 die attach material

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Microchip Technology Thailand (MTAI)	Microchip Technology Thailand (MTAI)
Wire material	CuPdAu	CuPdAu
Die attach material	3280	QMI-519
Molding compound material	G600	G600
Lead frame material	C194	C194

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve productivity by qualifyingQMI-519 die attach material

Change Implementation Status: In Progress

Estimated First Ship Date: February 28, 2021 (date code: 2110)

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

Time Table Summary:

	October 2020					->	**February 2021**				
Workweek	40	41	42	43	44		06	07	08	09	10
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:October 12, 2020: Issued initial notification.
February 13, 2021: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on February 28, 2021.

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

Attachments:

PCN_LIAL-23USLU235_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)

MCP23017-E/SO
MCP23017T-E/SO
MCP23S17-E/SO
MCP23S17T-E/SO
PIC16F57-E/SO
PIC16F57-I/SO
MCV28A-I/SO
PIC16F57T-I/SO028
PIC16F57T-I/SO
PIC16F57T-E/SO
PIC16F570-I/SO
MCP23018-E/SO
MCP23018T-E/SO
MCP23S18-E/SO
MCP23S18T-E/SO
PIC16LF1902-I/SO
PIC16LF1903-I/SO
PIC16F723A-E/SO
PIC16F723A-I/SO
PIC16F723AT-I/SO
PIC16F722A-E/SO
PIC16F722A-I/SO
PIC16F722AT-I/SO
PIC16LF723A-E/SO
PIC16LF723A-I/SO
PIC16LF722A-E/SO
PIC16LF722A-I/SO
PIC16CR54CT-20/SO012
CF745-04/SO
PIC16LC54C-04/SO
PIC16C54C-04/SO
PIC16C54C-20/SO
PIC16C54C-04/SOC04
PIC16C54C-20E/SO
PIC16LC54C-04I/SO
PIC16C54C-04I/SO
PIC16C54C-20I/SO
PIC16C54CT-20/SO068
PIC16LC54CT-04/SO150
PIC16C54CT-04/SO
PIC16C54CT-04I/SO104
PIC16C54CT-04I/SO
MCP23008-E/SO
MCP23008T-E/SO
MCP23S08-E/SO
MCP23S08T-E/SO

MCP2515-E/SO
MCP2515-E/SORB2
MCP2515-E/SORB4
MCP2515-I/SO
MCP2515-I/SORB2
MCP2515-I/SORB4
MCP2515T-I/SO
MCP2515T-I/SORB2
MCP2515T-I/SORB4
MCP2515T-E/SO
MCP2515T-E/SORB2
MCP2515T-E/SORB4
PIC16F54-E/SO
PIC16F54-I/SO023
PIC16F54-I/SO043
PIC16F54-I/SO
PIC16F54T-I/SO036
PIC16F54T-I/SO042
PIC16F54T-I/SO
PIC16F54T-E/SO040
PIC16F716-E/SO
PIC16F716-I/SO
PIC16F716T-I/SO048
PIC16F716T-I/SO061
PIC16F716T-I/SO
PIC16F716T-E/SO

MICROCHIP

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: LIAL-23USLU235

Date:
September 16, 2020

Qualification of QMI-519 die attach material for selected products available in 28L SOIC (.300in) package at MTAI assembly site. The qualification of QMI-519 die attach material for selected products available in 18L SOIC (.300in) package at MTAI assembly site will qualify by similarity (QBS).

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of QMI-519 die attach material for selected products available in 28L SOIC (.300in) package at MTAI assembly site. The qualification of QMI-519 die attach material for selected products available in 18L SOIC (.300in) package at MTAI assembly site will qualify by similarity (QBS).
CN	ES343740
QUAL ID	R2000455 rev. A
MP CODE	LEAN14N3XB04
Part No.	PIC16F723A-E/SO
Bonding No.	BDM-001843 Rev. D
CCB No.	3979 and 3979.001

Package

Type	28L SOIC
Package size	300 mils

Lead Frame

Paddle size	200 x 240 mils
Material	C194
Surface	Bare Cu DAP
Process	Stamped
Lead Lock	Yes
Part Number	10102807
Treatment	BOT

Material

Epoxy	QMI-519
Wire	CuPdAu
Mold Compound	G600
Plating Composition	Matte Tin

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI211101794.000	GRSM420271683.100	2024EPU
MTAI211102447.000	GRSM420271683.100	2024HEJ
MTAI211102450.000	GRSM420271683.100	2024HEP

Result [X] Pass [ ] Fail [ ] ____________________

28L SOIC 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-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C, 85°C and 125°C System: J750	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C, 85°C and 125°C System: J750			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +85°C and 125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C ,85°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH,192 hrs.**Bias Volt:** 5.5 Volts System: HAST 6000X			231		
	Electrical Test: +25°C ,85°C and 125°C System: J750		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, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test: +25°C ,85°C and 125°C System: J750		45(0)	0/45	Pass	
Bond Strength	Wire Pull (> 2.5 grams)	Mil.Std. 883-2011	30 (0) Wires	0/30	Pass	
Data Assembly	Bond Shear (>15.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	