Product Change Notification / LIAL-16UCZH910

Date:

15-Oct-2021

Product Category:

Linear Op Amps

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4732 Final Notice: Qualification of MMT as an additional assembly site for selected MCP6031, MCP6033, MCP6002, MCP6231 and MCP6241 device families available in 8L DFN (2x3x0.9mm) package.

Affected CPNs:

LIAL-16UCZH910_Affected_CPN_10152021.pdf
LIAL-16UCZH910_Affected_CPN_10152021.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 MCP6031, MCP6033, MCP6002, MCP6231 andMCP6241 device families available in 8L DFN (2x3x0.9mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	UTAC Thai Limited	UTAC Thai Limited	Microchip Technology

	(NSEB)	(NSEB)	Thailand (Branch) (MMT)
Wire material	Au	Au	CuPdAu
Die attach material	8600	8600	3280
Molding compound material	G700LTD	G700LTD	G700LTD
Lead frame material	EFTEC-64T	EFTEC-64T	C194
DAP Surface Prep	Ag	Ag	Bare Cu
Lead frame plating finish	Matte Tin	Matte Tin	Matte Tin
Lead frame lead-lock	No	No	Yes
	See Pre and Post Change attachment for lead frame comparison		

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve on-time delivery performance by qualifying MMT as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: October 01, 2021 (date code: 2140)

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

Time Table Summary:

	June 2021					**>**	**September 2021**				**October 2021**				
Workweek	23	24	25	26	27		36	37	38	39	40	41	42	43	44
Initial PCN Issue Date				X											
Final PCN Issue Date									X						
Qual Report Availability													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: June 21, 2021: Issued initial notification. **September 22, 2021:** Issued final notification. Provided estimated first ship date to be October 01, 2021. **October 15, 2021:** Re-issued this Final Notification to attach the completed qualification report. Updated the Timetable summary for Qual report availability from WW44 to WW42.

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-16UCZH910_Pre and Post Change_Summary.pdf
PCN_LIAL-16UCZH910_Qual__Report.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: LIAL-16UCZH910

Date:
October 6, 2021

Qualification of MMT as an additional assembly site for selected MCP6031, MCP6033, MCP6002, MCP6231 and MCP6241 device families available in 8L DFN (2x3x0.9mm) package. This is Q006 grade 1 qualification.

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PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of MMT as an additional assembly site for selected MCP6031, MCP6033, MCP6002, MCP6231 and MCP6241 device families available in 8L DFN (2x3x0.9mm) package. This is Q006 grade 1 qualification.**
CN	ES359035
QUAL ID	R2100665 Rev. A
MP CODE	A7CJ14B3XA00
Part No.	MCP6031-E/MC
Bonding No.	BDM-002966 Rev. A
CCB No.	4732
Package	
Type	8L DFN
Package size	2 x 3 x 0.9 mm
Lead Frame	
Paddle size	75 x 67 mils
Material	C194
Surface	Bare Cu
Process	Etched
Lead Lock	Yes
Part Number	10100852
Material	
Epoxy	3280
Wire	CuPdAu
Mold Compound	G700LTD
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
MMT-221102373.000	TMPE221475584.100	2123R6P
MMT-221200863.000	TMPE221475584.100	2124TPP
MMT-221200864.000	TMPE221475584.100	2124TQG

Result [X] Pass [ ] Fail [ ] _____

8L DFN (2x3x0.9 mm) assembled by MMT 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
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-020E)	IPC/JEDEC J-STD-020E	135	0/135	Pass	

<u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1)	**Electrical Test:** +25°C, 85°C and 125°C System: ETS300	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			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: ETS300			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: ETS300		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: + 85°C and 125°C System: ETS300		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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: ETS300		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	
	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: ETS300		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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: ETS300		231(0)	0/231	Pass	77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 500 hrs System: SHEL LAB	JESD22-A103		135		45 units / lot
	Electrical Test: +25°C, 85°C and 125°C System: ETS300		135(0)	0/135	Pass	
	Stress Condition: Bake 175°C, 1000 hrs System: SHEL LAB			135		
	Electrical Test: +25°C, 85°C and 125°C System: ETS300		135(0)	0/135	Pass	
Solderability **Temp 245°C**	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.245°C Solder material: Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 22 0/22	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 2.5 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	

CCB 4732
Pre and Post Change Summary
PCN#: LIAL-16UCZH910

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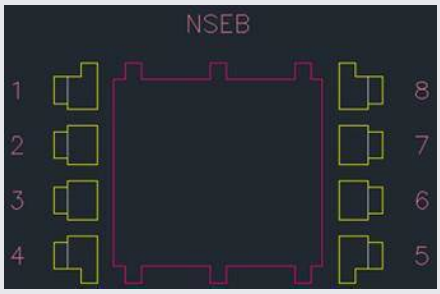
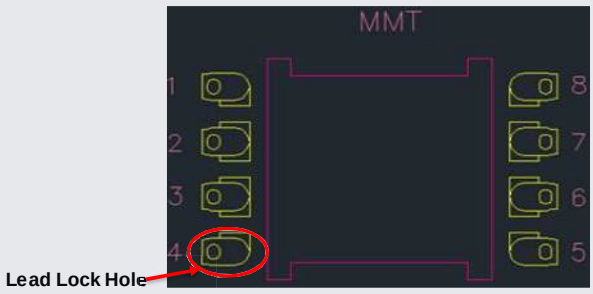
Lead frame comparison

NSEB



Lead frame material	EFTEC-64T
Lead frame DAP surface prep	Ag
Lead frame lead-lock	No

MMT



Lead frame material	C194
Lead frame DAP surface prep	Bare Cu
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.

MICROCHIP

LIAL-16UCZH910 - CCB 4732 Fina MCP6033 MCP6002 MCP6231 and MCP6241 device families available in 8L D

Affected Catalog Part Numbers(CPN)

MCP6031-E/MC
MCP6031T-E/MC
MCP6033-E/MC
MCP6033T-E/MC
MCP6002-E/MC
MCP6002T-E/MC
MCP6231-E/MC
MCP6231T-E/MC
MCP6241-E/MC
MCP6241T-E/MC
MCP6002-E/MCVAO
MCP6002T-E/MCVAO