Product Change Notification / LIAL-02XWMF227

Date:

09-Jan-2023

Product Category:

Linear Comparators, Linear Op Amps, Power Management - System Supervisors/Voltage Detectors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5129 Final Notice: Qualification of G700 as a new molding compound material and NiPdAuAg with roughened as a new lead frame DAP surface prep for selected MIC7300, MIC2778, MIC833, and MIC2779 device families available in 5L SOT23 package assembled at STAR assembly site.

Affected CPNs:

LIAL-02XWMF227_Affected_CPN_01092023.pdf
LIAL-02XWMF227_Affected_CPN_01092023.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 G700 as a new molding compound material and NiPdAuAg with roughened as a new lead frame DAP surface prep for selected MIC7300, MIC2778, MIC833, and MIC2779 device families available in 5L SOT23 package assembled at STAR assembly site.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Stars Microelectronics (Thailand) Public Company Limited (STAR)	Stars Microelectronics (Thailand) Public Company Limited (STAR)
Wire Material	Au	Au
Die Attach Material	84-1LMISR4	84-1LMISR4
Molding Compound Material	G600	G700
Lead-Frame Material	C194	C194
Lead Frame DAP Surface Prep	NiPdAu with Roughened	NiPdAuAg with Roughened
	See Pre and Post Change Summary for comparison.	

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve productivity by qualifying G700 mold compound material and NiPdAuAg with Roughened as a new lead frame die attach paddle (DAP) surface prep.

Change Implementation Status: In Progress

Estimated First Ship Date: January 31, 2023 (date code: 2305)

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

Time Table Summary:

	May 2022					>	January 2023				
Workweek	19	20	21	22	23		01	02	03	04	05
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:
May 05, 2022: Issued initial notification.
January 09, 2023: Issued final notification. Attached is the qualification report and added estimated first ship date by January 31,2023.

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-02XWMF227_Qual Report.pdf
PCN_LIAL-02XWMF227_Pre and Post Change Summary.pdf

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

Terms and Conditions:

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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.

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: LIAL-02XWMF227

Date:
December 23, 2022

Qualification of G700 as a new molding compound material and NiPdAuAg with roughened as a new lead frame DAP surface prep for selected MIC7300, MIC2778, MIC833, and MIC2779 device families available in 5L SOT23 package assembled at STAR assembly site.

PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of G700 as a new molding compound material and NiPdAuAg with roughened as a new lead frame DAP surface prep for selected MIC7300, MIC2778, MIC833, and MIC2779 device families available in 5L SOT23 package assembled at STAR assembly site.**
CN	E000107960
QUAL ID	R2200721 Rev. A
MP CODE	25808T6BXA03
Part No.	MIC2778-1YM5-TR
Bonding No.	BD-000676 Rev.01
CCB No.	5129
Package	
Type	5L SOT23
Lead Frame	
Paddle size	52 x 72 mils
Material	C194
Surface	NiPdAuAg
Process	STAMP
Lead Lock	No
Part Number	MLEP00026MIC-T
Treatment	RT+UPG
Material	
Epoxy	84-1LMISR4
Wire	Au
Mold Compound	G700
Plating Composition	NiPdAu (PPF)

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PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer Lot No.	Date Code
STAR230700010.000	GRSM422202451.400	2220RQ0
STAR230700011.000	GRSM422202451.400	2220RQQ
STAR230700012.000	GRSM422202451.400	2220RSP

Result [X] Pass [ ] Fail [ ] ____________________

5L SOT-23 assembled by STAR 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 System: TMT	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		0/693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +25°C System: TMT		693(0)	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		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>3.00 grams)		15(0)	0/15	Pass	
	Bond Shear (>21.10 grams)		15(0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT		231(0)	0/231	Pass	77 units / lot

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 **Electrical Test:** +25°C System: TMT	JESD22-A103	45(0)	0/45 0/45	Pass	45 units
Solderability Temp 215°C	**Steam Aging:** Temp 93°C,1Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63, Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22(0)	0/22 0/22 0/22	Pass	
Solderability Temp 245°C	**Steam Aging:** Temp 93°C,1Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22(0)	0/22 0/22 0/22	Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>3.00 grams) Bond Shear (>21.10 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30(0) Wires 30(0) bonds	0/30 0/30	Pass Pass	

Affected Catalog Part Numbers (CPN)

MIC7300YM5-TR
MIC7300YM5-TX
MIC2778-1YM5-TR
MIC2778-2YM5-TR
MIC833YM5-TR
MIC2779H-1YM5-TR
MIC2779H-2YM5-TR
MIC2779L-1YM5-TR
MIC2779L-2YM5-TR

CCB 5129
Pre and Post Change Summary
PCN #: LIAL-02XWMF227

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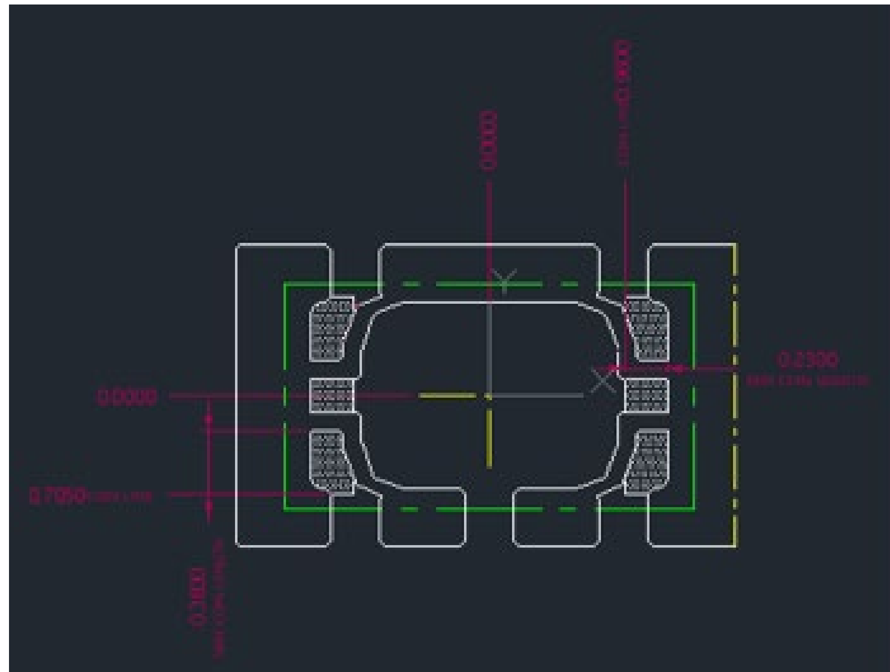
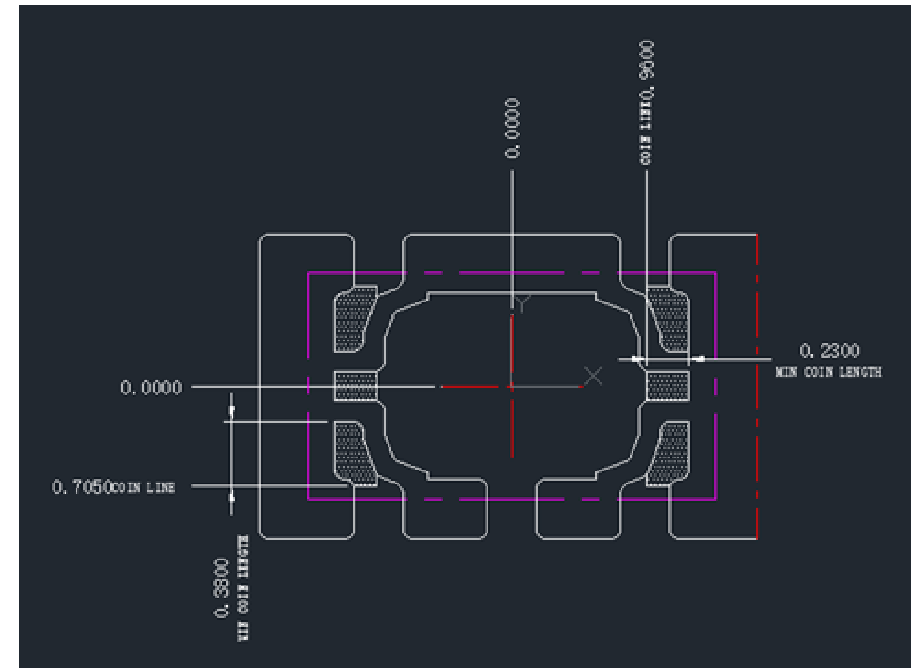
Lead Frame Comparison

Pre Change	Post Change
	

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