Product Change Notification / ASER-28RAPG851

Date:

03-May-2022

Product Category:

Power Management - System Supervisors/Voltage Detectors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5128 Initial Notice: Qualification of a new lead frame design and G700 as a new mold compound material for selected MIC277xxx device family available in 5L SOT-23 package assembled at STAR assembly site.

Affected CPNs:

ASER-28RAPG851_Affected_CPN_05032022.pdf
ASER-28RAPG851_Affected_CPN_05032022.csv

Notification Text:

PCN Status: Initial 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 a new lead frame design and G700 as a new mold compound material for selected MIC277xxx device family available in 5L SOT-23 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
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 a new lead frame design and G700 mold compound.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: July 2022

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	May 2022					>	**July 2022**				
Workweek	19	20	21	22	23		27	28	29	30	31
Initial PCN Issue Date	x										
Qual Report											x

Availability											
Final PCN Issue Date											x

Method to Identify Change: Traceability code

Qualification Plan: Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History: May 3, 2022: Issued initial 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 ASER-28RAPG851_Qual Plan.pdf
PCN_ASER-28RAPG851_Pre and Post Change Summary.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.

CCB 5128
Pre and Post Change Summary
PCN #: ASER-28RAPG851

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Lead Frame Design Comparison

Pre Change

Lead Frame Material	DAP Surface Prep
C194	NiPdAu with Roughened

Post Change

Lead Frame Material	DAP Surface Prep
C194	NiPdAuAg with Roughened

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Affected Catalog Part Numbers(CPN)

MIC2774H-17YM5-TR
MIC2774H-22YM5-TR
MIC2774H-25YM5-TR
MIC2774H-28YM5-TR
MIC2774H-29YM5-TR
MIC2774H-44YM5-TR
MIC2774L-17YM5-TR
MIC2774L-22YM5-TR
MIC2774L-23YM5-TR
MIC2774L-25YM5-TR
MIC2774L-28YM5-TR
MIC2774L-29YM5-TR
MIC2774L-31YM5-TR
MIC2774L-44YM5-TR
MIC2774L-46YM5-TR
MIC2774N-17YM5-TR
MIC2774N-22YM5-TR
MIC2774N-23YM5-TR
MIC2774N-25YM5-TR
MIC2774N-28YM5-TR
MIC2774N-29YM5-TR
MIC2774N-31YM5-TR
MIC2774N-44YM5-TR
MIC2775-17YM5-TR
MIC2775-22YM5-TR
MIC2775-23YM5-TR
MIC2775-25YM5-TR
MIC2775-26YM5-TR
MIC2775-28YM5-TR
MIC2775-29YM5-TR
MIC2775-31YM5-TR
MIC2775-44YM5-TR
MIC2775-46YM5-TR
MIC2776L-YM5-TR
MIC2776N-YM5-TR
MIC2777-17YM5-TR
MIC2777-22YM5-TR
MIC2777-23YM5-TR
MIC2777-25YM5-TR
MIC2777-26YM5-TR
MIC2777-28YM5-TR
MIC2777-29YM5-TR

MIC2777-31YM5-TR
MIC2777-44YM5-TR
MIC2775-29YM5-TX
MIC2774H-23YM5-TR
MIC2774H-26YM5-TR
MIC2774H-31YM5-TR
MIC2774H-46YM5-TR
MIC2774L-26YM5-TR
MIC2774N-26YM5-TR
MIC2774N-46YM5-TR
MIC2776H-YM5-TR
MIC2777-46YM5-TR
MIC2774N-29YM5-TX
MIC2776L-YM5-TX
MIC2776N-YM5-TX

Lead Frame Design Comparison

Pre Change

Lead Frame Material	DAP Surface Prep
C194	NiPdAu with Roughened

Post Change

Lead Frame Material	DAP Surface Prep
C194	NiPdAuAg with Roughened

QUALIFICATION PLAN SUMMARY

PCN #: ASER-28RAPG851

Date:
April 28, 2022

Qualification of a new lead frame design and G700 as a new mold compound material for selected MIC277xxx device family available in 5L SOT-23 package assembled at STAR assembly site.

Purpose: Qualification of a new lead frame design and G700 as a new mold compound material for selected MIC277xxx device family available in 5L SOT-23 package assembled at STAR assembly site.

CCB: 5128

Misc.	Assembly site	STAR
	BD Number	BD-000675 Rev.01
	MP Code (MPC)	27802T6BXC09
	Part Number (CPN)	MIC2774L-31YM5-TR
	MSL information	MSL-1
	Assembly Shipping Media (T/R, Tube/Tray)	T/R
	Base Quantity Multiple (BQM)	3,000 units
Lead-Frame	Paddle size	72x52 mils
	Material	C194
	DAP Surface Prep	NiPdAuAg with Roughened (Thickness: AuAg = 0.2-2.5 uInch, Pd = 0.2-0.8 uInch, Ni = 10-50 uInch)
	Treatment	RT+UPG
	Process (Stamped/Etched)	STAMP
	Lead-lock Design (Locking Hole, Half Etched, Dimple, etc.)	No
	Part Number	MLEP00026MIC-T
	Lead frame Thickness	6 mils
	Lead Plating	PPF
	Strip Size	270x83 mm
	Strip Density	960 units
Bond Wire	Material	Au
Die Attach	Part Number	84-1LMISR4
	Conductive	Yes
MC	Part Number	G700
PKG	PKG Type	SOT23
	Pin/Ball Count	5
	PKG width/size	-

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	REL Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5	MTAI	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability-SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Backward Solderability	J-STD-002D ;Perform 8 hours steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.	22	5	1	27	> 95% lead coverage	5	MTAI	
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0	5	STAR	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5	STAR	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	STAR	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	STAR / MTAI	
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at +25°C. MSL1@ 260C	231	15	3	738	0	15	MTAI	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	+130°C/85% RH for 96 hours Electrical test pre and post stress at +25°C	77	5	3	246	0	10	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	+130°C/85% RH for 96 hrs Electrical test pre and post stress at +25°C	77	5	3	246	0	10	MTAI	Spares should be properly identified.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	REL Test Site	Special Instructions
									Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at +25°C; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.