Product Change Notification / NTDO-14MNBI131

Date:

09-Mar-2022

Product Category:

Linear Comparators, Linear Op Amps, Linear Regulators

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5025 Initial Notice: Qualification of G700 as a new mold compound material for selected Micrel MIC3490, MIC52xx, MIC62xxxM5, SPN020xxxx device families available in 5L SOT-23 package assembled at STAR assembly site.

Affected CPNs:

NTDO-14MNBI131_Affected_CPN_03092022.pdf
NTDO-14MNBI131_Affected_CPN_03092022.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 G700 as a new mold compound material and DAP surface prep for selected Micrel MIC3490, MIC52xx, MIC62xxxM5, SPN020xxxx device families 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
DAP Surface Prep	NiPdAu with Roughened	NiPdAu (Ag with Roughened)
Lead-frame Material	C194	C194

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying G700 mold compound material and DAP surface prep.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: May 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:

	March 2022					**>**	**May 2022**				
Workweek	10	11	12	13	14		19	20	21	22	23
Initial PCN Issue Date		x									
Qual Report Availability									x		
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: March 9, 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_NTDO-14MNBI131_Qual_Plan.pdf
PCN_NTDO-14MNBI131_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 5025
Pre and Post Change Summary
PCN #: NTDO-14MNBI131

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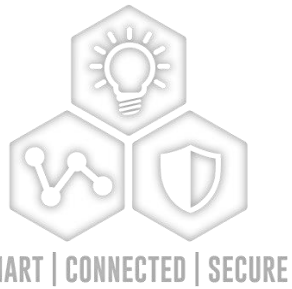
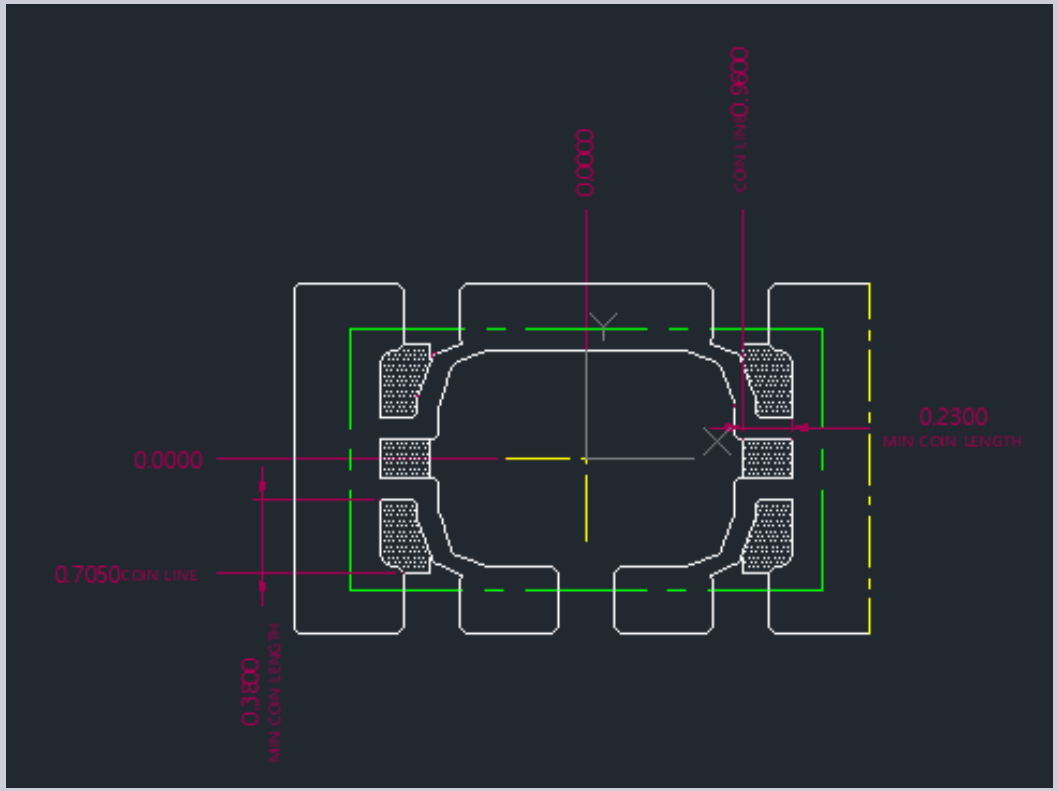


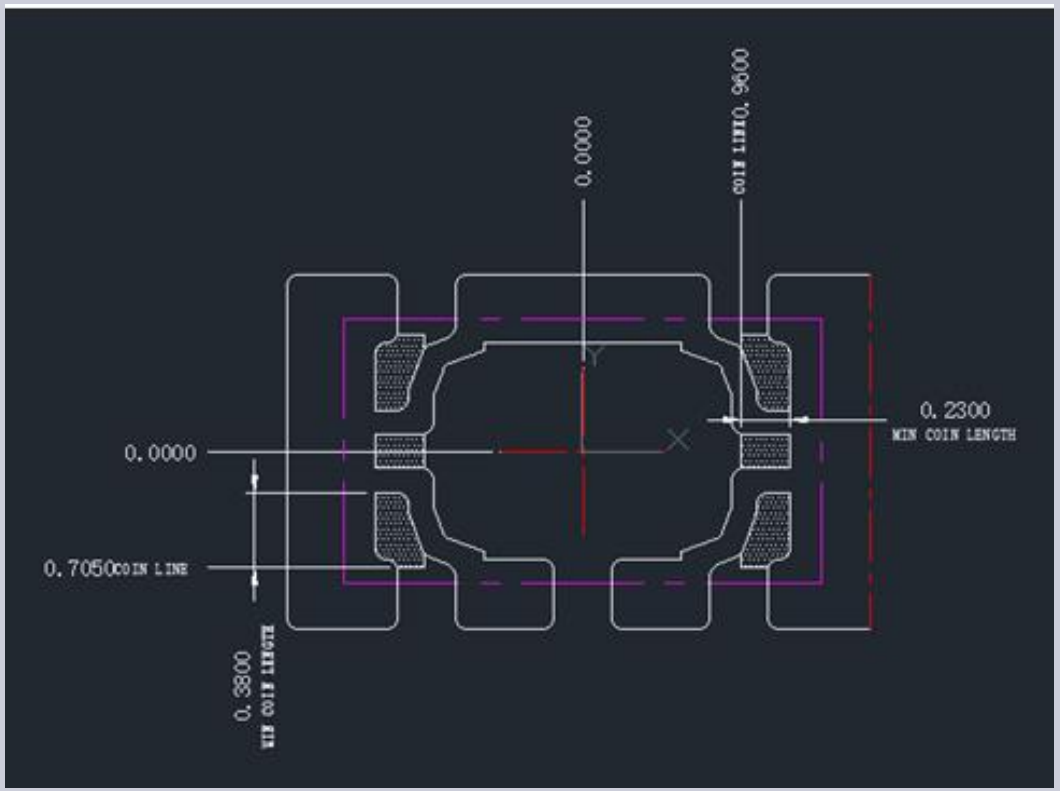
Leadframe Comparison

Pre Change



DAP Surface Prep	NiPdAu with Roughened
Lead-frame Material	C194

Post Change



DAP Surface Prep	NiPdAu (Ag with Roughened)
Lead-frame Material	C194

MICROCHIP

QUALIFICATION PLAN SUMMARY

PCN #: NTDO-14MNBI131

Date:
Feb 23, 2022

Qualification of G700 as a new mold compound material and DAP surface prep for selected MIC3490, MIC52xx, MIC62xxxM5, SPN020xxxx Micrel device families available in 5L SOT-23 package assembled at STAR assembly site. This is Q100 Automotive Grade 1 qualification.

Purpose: Qualification of G700 as a new mold compound material and DAP surface prep for selected MIC3490, MIC52xx, MIC62xxxM5, SPN020xxxx Micrel device families available in 5L SOT-23 package assembled at STAR assembly site. This is Q100 Automotive Grade 1 qualification.

CCB #: 5025

Misc.	Assembly site	STAR
	BD Number	BD-000496 rev01
	MP Code (MPC)	21803Y6BXVA1
	Part Number (CPN)	MIC5233YM5-TRVAO
	MSL information	MSL-1 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	T/R
	Base Quantity Multiple (BQM)	3,000 units
	Reliability Site	MTAI
Lead-Frame	Paddle size	72x52 mils
	Material	C194
	DAP Surface Prep	NiPdAuAg with Roughened
	Treatment	RT+UPG
	Process	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

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp) Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours of 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.
Backward Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hr 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				30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5	0	5				30 bonds from a min. 5 devices.

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp) Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5				
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5				
HTSL (High Temp Storage Life)	JESD22-A103 +125°C, +150°C or +175°C	Grade 1: 500 hrs (+175°C)	Grade 1: +25°C, +125°C	45	5	1	50	0	21 - 83	STAR	MTAI		Spares should be properly identified.
Preconditioning - Required for surface mount devices	J-STD-020JESD22-A113+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. MSL-1@260C		Grade 1: +25°C +125°C	231	15	3	738	0	15	STAR	MTAI		Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	JESD22-A101 or A110 +130°C/85% RH for 96 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C, +125°C	77	5	3	246	0	10 - 14	STAR	SAN JOSE LAB		Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	JESD22-A102, A118, or A101 +130°C/85% RH for 96 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C	77	5	3	246	0	10	STAR	MTAI		Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp) Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
Temp Cycle	JESD22-A104 and Appendix 3 65°C to +150°C	Grade 1: 500 cycles (-65ºC to 150ºC)	Grade 1: +125°C	77	5	3	246	0	15 - 60	STAR	MTAI		Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Affected Catalog Part Numbers (CPN)

MIC5235-5.0YM5-TX
MIC5235-2.5YM5-TX
MIC5235-3.3YM5-TX
MIC5235YM5-TX
MIC5225-1.5YM5-TR
MIC5225-5.0YM5-TR
MIC5225-2.5YM5-TR
MIC5225-2.7YM5-TR
MIC5225-3.0YM5-TR
MIC5225-1.8YM5-TR
MIC5225-3.3YM5-TR
MIC5225YM5-TR
MIC5233-2.5YM5-TR
MIC5233YM5-TR
MIC5233-3.3YM5-TR
MIC5233-1.8YM5-TR
MIC5233-3.0YM5-TR
MIC5233-5.0YM5-TR
MIC5233-3.3YM5A-TR
MIC3490-2.5YM5-TR
MIC5235-1.5YM5-TR
MIC5235-5.0YM5-TR
MIC3490-3.3YM5-TR
MIC5235-2.5YM5-TR
MIC5235-2.7YM5-TR
MIC5235-3.0YM5-TR
MIC3490-1.8YM5-TR
MIC5235-2.8YM5-TR
MIC3490-3.0YM5-TR
MIC3490-5.0YM5-TR
MIC5235-1.8YM5-TR
MIC5235-3.3YM5-TR
MIC5235YM5-TR
SPN020180Y-TR
SPN020127Y-TR
SPN020156G-TR
SPN020155G-TR
SPN020170G-TR
SPN020161G-TR
MIC5233-5.0YM5-TRV01
MIC5233YM5-TRVAO
MIC5233-1.8YM5-TRVAO
MIC5233-5.0YM5-TRVAO
MIC5233-3.3YM5-TRVAO
MIC5206-2.5YM5-TR
MIC5206-2.7YM5-TR

MIC5206-3.0YM5-TR
MIC5206-3.2YM5-TR
MIC5206-3.3YM5-TR
MIC5206-3.6YM5-TR
MIC5206-3.8YM5-TR
MIC5206-4.0YM5-TR
MIC5206-5.0YM5-TR
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MIC5216-3.6YM5-TR
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MIC5238-1.0YM5-TR
MIC5238-1.1YM5-TR
MIC5238-1.3YM5-TR
MIC6211YM5-TR
MIC6270YM5-TR
MIC5205YM5-TX
MIC5207YM5-TX
MIC5205-2.5YM5-TX
MIC5207-5.0YM5-TX
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MIC5219YM5-TX
MIC5207-1.8YM5-TR
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MIC5219-5.0YM5-TR
MIC5219YM5-TR
MIC5205-3.3YM5-TR-HCM
MIC5207-2.5YM5-TX
MIC5207-3.3YM5-TX
MIC5225-5.0YM5-TX
MIC5235-1.5YM5-TX