



Product Change Notification / NTDO-14MNBI131

Date:

15-Nov-2022

Product Category:

Linear Comparators, Linear Op Amps, Linear Regulators

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5025 Final 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_11152022.pdf](#)

[NTDO-14MNBI131_Affected_CPN_11152022.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 mold compound material 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:

Date														
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Method to Identify Change:Traceability code

Qualification Report:Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History:March 09, 2022: Issued initial notification.

November 11, 2022: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on November 15, 2022.

November 15, 2022: Re-issued final notification. Updated the DAP surface prep toNiPdAuAg with Roughened in the Post change field.

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_Pre_and_Post_Change Summary.pdf](#)

[PCN_NTDO-14MNBI131_Qual Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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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)

MIC5205-2.85YM5-TR
MIC5225-5.0YM5-TX
MIC5235-1.5YM5-TX
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
MIC5233-1.8YM5-TRVAO
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
MIC5233YM5-TRVAO
MIC5233-5.0YM5-TRVAO
MIC5233-3.3YM5-TRVAO

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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

MIC5216-2.5YM5-TR

MIC5216-3.3YM5-TR

MIC5216-3.6YM5-TR

MIC5216-5.0YM5-TR

MIC5203-2.6YM5-TR

MIC5203-2.8YM5-TR

MIC5203-3.0YM5-TR

MIC5203-3.3YM5-TR

MIC5203-3.6YM5-TR

MIC5203-3.8YM5-TR

MIC5203-4.0YM5-TR

MIC5203-4.5YM5-TR

MIC5203-4.7YM5-TR

MIC5203-5.0YM5-TR

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

MIC5219-2.5YM5-TX

MIC5219-3.3YM5-TX

MIC5219YM5-TX

MIC5207-1.8YM5-TR

MIC5207-1.8YM5-TX

MIC5205-2.5YM5-TR

MIC5205-2.7YM5-TR

MIC5205-2.8YM5-TR

MIC5205-2.9YM5-TR

MIC5205-3.0YM5-TR

MIC5205-3.1YM5-TR

MIC5205-3.2YM5-TR

MIC5205-3.6YM5-TR

MIC5205-3.8YM5-TR

MIC5205-4.0YM5-TR

MIC5205-5.0YM5-TR

MIC5205YM5-TR

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MIC5205-3.3YM5-TR

MIC5207-2.5YM5-TR

MIC5207-2.8YM5-TR

MIC5207-2.9YM5-TR

MIC5207-3.0YM5-TR

MIC5207-3.1YM5-TR

MIC5207-3.2YM5-TR

MIC5207-4.0YM5-TR

MIC5207-5.0YM5-TR

MIC5207YM5-TR

MIC5207-3.3YM5-TR

MIC5219-2.6YM5-TR

MIC5219-2.7YM5-TR

MIC5219-2.8YM5-TR

MIC5219-2.85YM5-TR

MIC5219-2.9YM5-TR

MIC5219-3.1YM5-TR

MIC5219-3.6YM5-TR

MIC5219-2.5YM5-TR

MIC5219-3.0YM5-TR

MIC5219-3.3YM5-TR

MIC5219-5.0YM5-TR

MIC5219YM5-TR

MIC5205-3.3YM5-TR-HCM

MIC5207-2.5YM5-TX

MIC5207-3.3YM5-TX

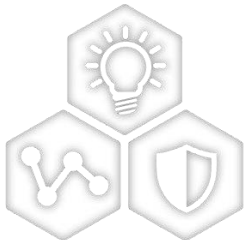
CCB 5025

Pre and Post Change Summary

PCN #: NTDO-14MNBI131



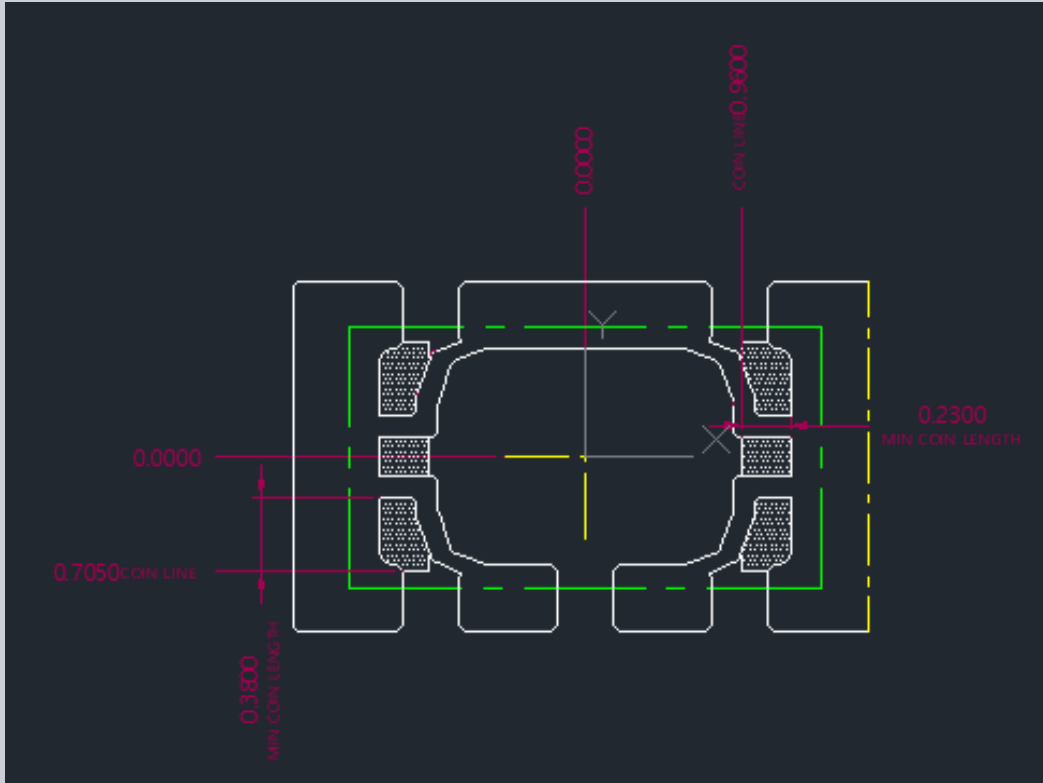
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SMART | CONNECTED | SECURE

Leadframe Comparison

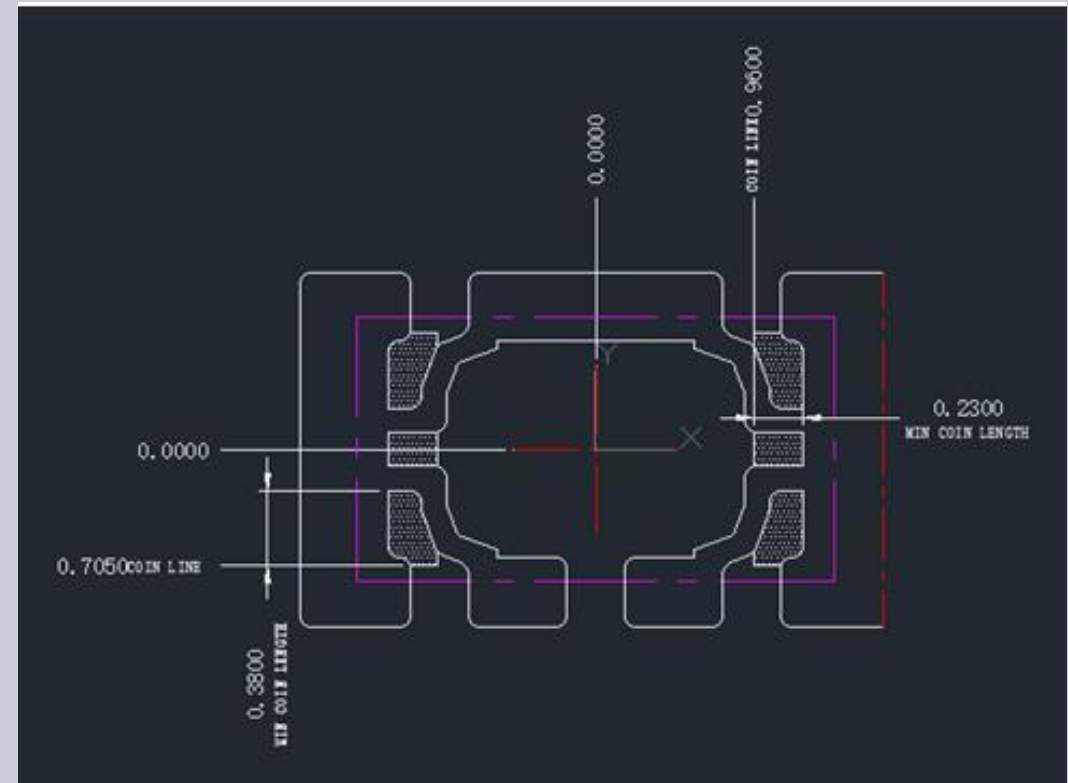
Pre Change



DAP Surface Prep
Lead-frame Material

NiPdAu with Roughened
C194

Post Change



DAP Surface Prep
Lead-frame Material

NiPdAuAg with Roughened
C194



MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN ID#: NTDO-14MNBI131

Date:
October 26, 2022

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. This is a Q100 grade 1 qualification.



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	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. This is a Q100 grade 1 qualification.
CCB	5025
CN	E000095749
QUAL ID	R2200571 Rev. A
MP CODE	21803Y6BXVA1
Part No.	MIC5233YM5-TRVAO
Bonding No.	BD-000496 Rev. 01
<u>Package</u>	
Type	5L SOT-23
<u>Lead Frame</u>	
Paddle size	72 x 52 mils
Material	C194
Surface	NiPdAuAg with Roughened
Process	STAMP
Lead Lock	No
Part Number	MLEP00026MIC-T
Treatment	RT+UPG
<u>Material</u>	
Epoxy	84-1LMISR4
Wire	Au wire
Mold Compound	G700
Plating Composition	PPF (NiPdAu)



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
STAR225000084.000	TMPE222174042.300	221069A
STAR225000085.000	TMPE222174042.300	22106AE
STAR225100003.000	TMPE222174042.300	22116AH

Result

☒ 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
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 1)	Electrical Test: +25°C, 125°C and -40°C System: TMT	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/IPC/JEDEC		0/693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH	J-STD-020E		0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +25°C and 125°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: +125°C System: TMT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>5.00 grams)		15(0)	0/15	Pass	
	Bond Shear (>25.00 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: 30 Volts System: HAST 6000X	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 125°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, 500 hrs. System: SHEL LAB	JESD22- A103		0/45		
	Electrical Test: +25°C and 125°C System: TMT		45(0)	0/45	Pass	
Solderability Temp 215°C	Steam Aging: Temp 93°C, 1Hr System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63, Pb37 System: ERS A 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, 1Hr System: SAS-3000 Solder Dipping: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERS A 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 (>4.00 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>23.10 grams)	CDF-AEC- Q100-001	30(0) bonds	0/30	Pass	