



## Product Change Notification / NTDO-14MNBI131

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### Date:

11-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\\_11112022.pdf](#)

[NTDO-14MNBI131\\_Affected\\_CPN\\_11112022.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:

	Pre Change	Post Change
<b>Assembly Site</b>	Stars Microelectronics (Thailand) Public Company Limited  (STAR)	Stars Microelectronics (Thailand) Public Company Limited  (STAR)
<b>Wire Material</b>	Au	Au
<b>Die Attach Material</b>	84-1LMISR4	84-1LMISR4
<b>Molding Compound Material</b>	G600	G700
<b>DAP Surface Prep</b>	NiPdAu with Roughened	NiPdAu (Ag with Roughened)
<b>Lead-frame Material</b>	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 First Ship Date:**November 15, 2022 (date code: 2247)

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

**Time Table Summary:**

	March 2022					>	November 2022				
Workweek	1 0	1 1	1 2	1 3	1 4		4 5	4 6	4 7	4 8	4 9
Initial PCN Issue Date		x									
Qual Report Availability							x				
Final PCN Issue Date							x				
Estimated								x			

Implementation 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.

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)

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  
MIC5233-3.3YM5A-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  
MIC5233-1.8YM5-TRVAO  
MIC5233-5.0YM5-TRVAO  
MIC5233-3.3YM5-TRVAO  
MIC5206-2.5YM5-TR

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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  
MIC5205-2.85YM5-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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NTDO-14MNBI131 - 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.

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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

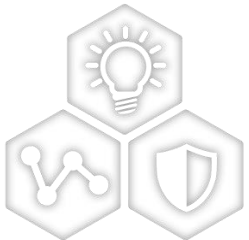
**CCB 5025**

**Pre and Post Change Summary**  
**PCN #: NTDO-14MNBI131**



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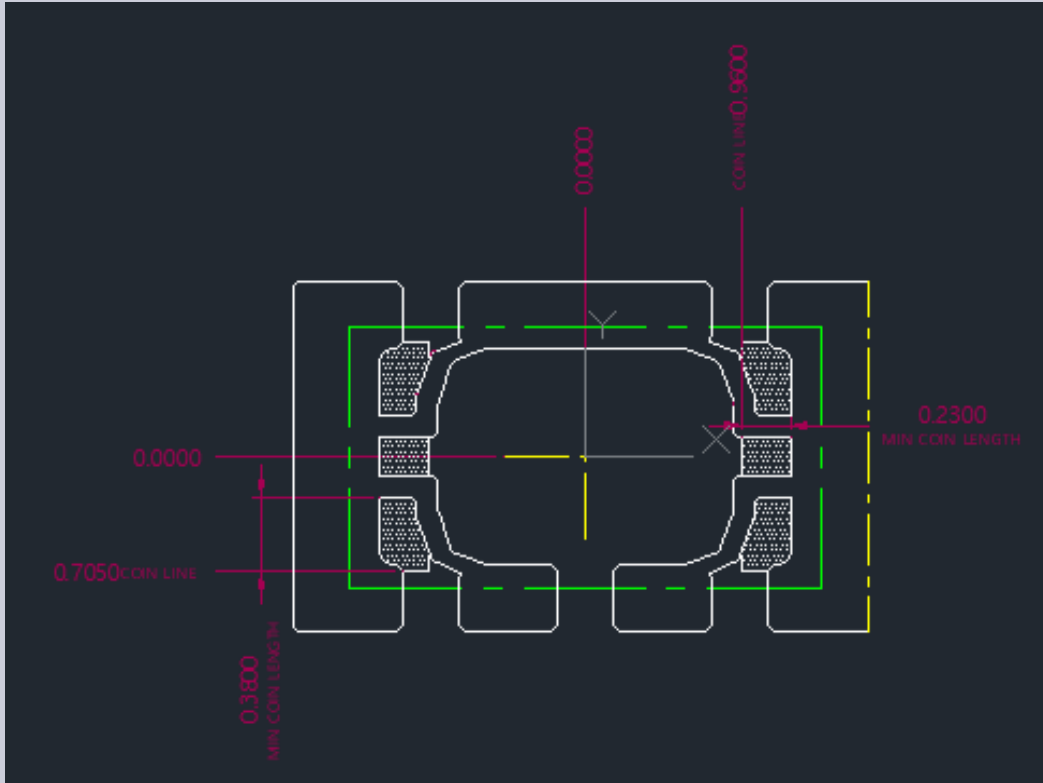
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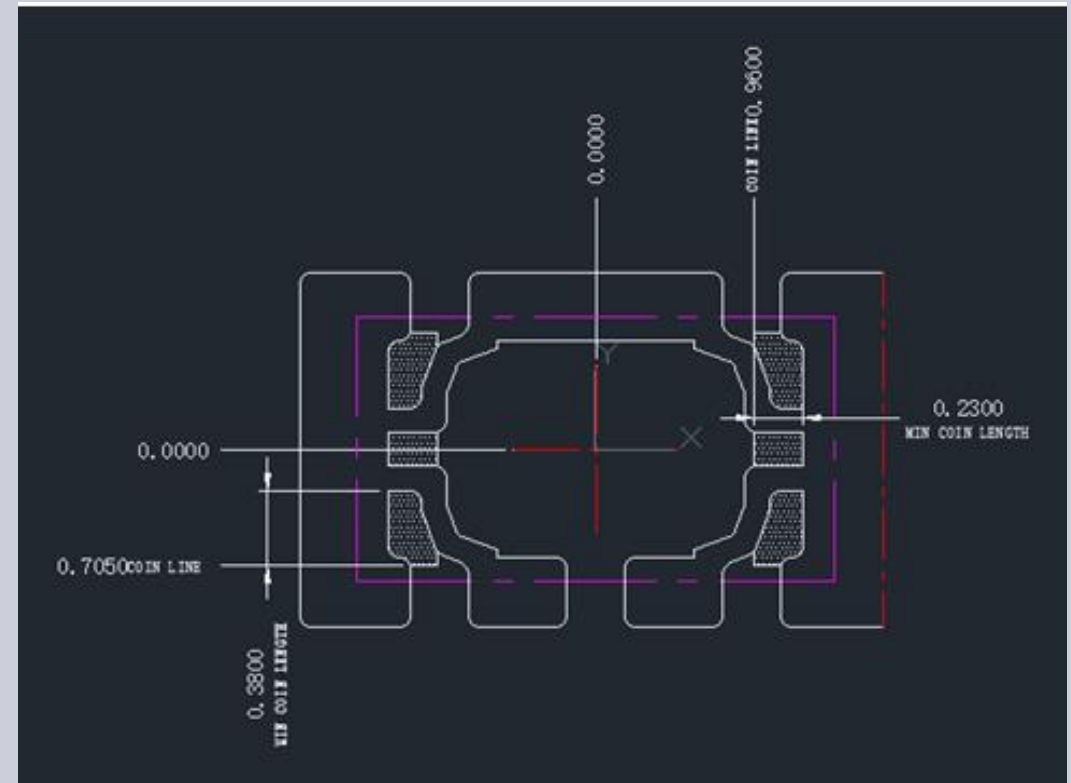
# Leadframe Comparison

## 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 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

<b>Purpose</b>	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.
<b>CCB</b>	5025
<b>CN</b>	E000095749
<b>QUAL ID</b>	R2200571 Rev. A
<b>MP CODE</b>	21803Y6BXVA1
<b>Part No.</b>	MIC5233YM5-TRVAO
<b>Bonding No.</b>	BD-000496 Rev. 01
<b><u>Package</u></b>	
<b>Type</b>	5L SOT-23
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	72 x 52 mils
<b>Material</b>	C194
<b>Surface</b>	NiPdAuAg with Roughened
<b>Process</b>	STAMP
<b>Lead Lock</b>	No
<b>Part Number</b>	MLEP00026MIC-T
<b>Treatment</b>	RT+UPG
<b><u>Material</u></b>	
<b>Epoxy</b>	84-1LMISR4
<b>Wire</b>	Au wire
<b>Mold Compound</b>	G700
<b>Plating Composition</b>	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)	<b>Electrical Test:</b> +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		
	<b>Electrical Test:</b> +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
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22- A104		0/231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +125°C System: TMT		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (>5.00 grams)		15(0)	0/15	Pass	
	Bond Shear (>25.00 grams)		15(0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		0/231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C System: TMT		231(0)	0/231	Pass	
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 30 Volts System: HAST 6000X	JESD22- A110		0/231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C and 125°C System: TMT		231(0)	0/231	Pass	

## PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 500 hrs. System: SHEL LAB	JESD22- A103		0/45		
	<b>Electrical Test:</b> +25°C and 125°C System: TMT		45(0)	0/45	Pass	
<b>Solderability Temp 215°C</b>	<b>Steam Aging:</b> Temp 93°C, 1Hr System: SAS-3000	J-STD-002	22(0)	0/22		
	Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63, Pb37 System: ERSA RA 2200D			0/22		
	Visual Inspection: External Visual Inspection			0/22	Pass	
<b>Solderability Temp 245°C</b>	<b>Steam Aging:</b> Temp 93°C, 1Hr System: SAS-3000	J-STD-002	22(0)	0/22		
	Solder Dipping: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D			0/22		
	Visual Inspection: External Visual Inspection			0/22	Pass	
<b>Physical Dimensions</b>	Physical Dimension, 10 units / 1 lot	JESD22- B100/B108	30(0) Units	0/30	Pass	
<b>Bond Strength Data Assembly</b>	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	