Product Change Notification: ALAN-10KOZF594

Date:

31-Jan-2025

Product Category:

Analog Temperature Sensors, Analog to Digital Converters, Digital Potentiometers, Digital to Analog Converters

Notification Subject:

CCB 7276 Final Notice: Qualification palladium coated copper with gold flash (CuPdAu) as a new bond wire material for selected MCP3421, MCP4725, MCP4726, MCP4706, MCP4716, MCP9510, MCP47DA1, MCP4023, MCP4022, MCP4013, MCP4012, and MCP3425 device families available in 6L SOT-23 package.

Affected CPNs:

ALAN-10KOZF594_Affected_CPN_01312025.pdf
ALAN-10KOZF594_Affected_CPN_01312025.csv

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 palladium coated copper with gold flash (CuPdAu) as a new bond wire material for selected MCP3421, MCP4725, MCP4726, MCP4706, MCP4716, MCP9510, MCP47DA1, MCP4023, MCP4022, MCP4013, MCP4012, and MCP3425 device families available in 6L SOT-23 package.

Pre and Post Summary Changes:

	Pre Change	**Post Change**
Assembly Site	Microchip Technology Thailand (HQ) (MTAI)	Microchip Technology Thailand (HQ) (MTAI)

Wire Material	Au	CuPdAu
Die Attach Material	84-3J	84-3J
Molding Compound Material	G600V	G600V
Lead-Frame Material	CDA194	A194
DAP Surface Prep	Ag Spot Plated	Ag single ring Plated

Note: C194, A194, or CDA194 Lead-frame material are the same, it is just a MCHP internal labelling difference.

Impacts to Datasheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying palladium coated copper with gold flash (CuPdAu) as a new bond wire material.

Change Implementation Status: In Progress

Estimated First Ship Date: 07 March 2025 (date code: 2510)

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

Timetable Summary:

	November 2024					**>**	**January 2025**					**>**	**March 2025**				
Work Week	44	45	46	47	48		01	02	03	04	05		09	10	11	12	13
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: November 13, 2024: Issued initial notification.
January 31, 2025: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on March 07, 2025.

Note: The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable product.

Attachments:

PCN_ALAN-10KOZF594 Pre and Post Change Summary.pdf
PCN_ALAN-10KOZF594 Qual Report.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.

ALAN-10KOZF594 - CCB 7276 Final Notice: Qualification palladium coated copper with gold flash (CuPdAu) as a new bond wire material for selected MCP3421, MCP4725, MCP4726, MCP4706, MCP4716, MCP9510, MCP47DA1, MCP4023, MCP4022, MCP4013, MCP4012, and MCP3425 device families available in 6L SOT-23 package.

Affected Catalog Part Numbers (CPN)

MCP3421A0T-E/CHV02
MCP4725A2T-E/CH
MCP4725A3T-E/CH
MCP4725A1T-E/CH
MCP4726A1T-E/CH
MCP4706A1T-E/CH
MCP4726A2T-E/CH
MCP4726A3T-E/CH
MCP4716A2T-E/CH
MCP4706A2T-E/CH
MCP4706A3T-E/CH
MCP4716A3T-E/CH
MCP4726A0T-E/CH
MCP4716A0T-E/CH
MCP4716A1T-E/CH
MCP4706A0T-E/CH
MCP3421A2T-E/CH
MCP4725A0T-E/CH
MCP9510CT-E/CH
MCP9510HT-E/CH
MCP9510HT-E/CHBAA
MCP47DA1T-A0E/OT
MCP47DA1T-A1E/OT
MCP4023T-502E/CH
MCP4022T-103E/CH
MCP4023T-202E/CH
MCP4023T-103E/CH
MCP4023T-503E/CH
MCP4013T-502E/CH
MCP4013T-202E/CH
MCP4013T-103E/CH
MCP4013T-503E/CH
MCP4022T-202E/CH
MCP4022T-502E/CH
MCP4012T-202E/CH
MCP4012T-502E/CH
MCP4012T-103E/CH
MCP3421A0T-E/CH
MCP3425A3T-E/CH
MCP4022T-503E/CH
MCP4012T-503E/CH
MCP3425A0T-E/CH
MCP3421LA0T-E/CH
MCP3421A1T-E/CH
MCP3425A1T-E/CH
MCP3425A2T-E/CH

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MCP3421A3T-E/CH

CCB 7276
Pre and Post Change Summary
PCN# ALAN-10KOZF594

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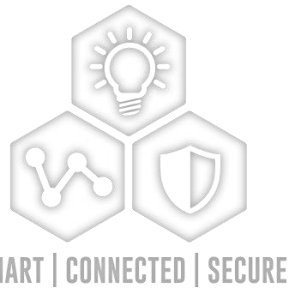
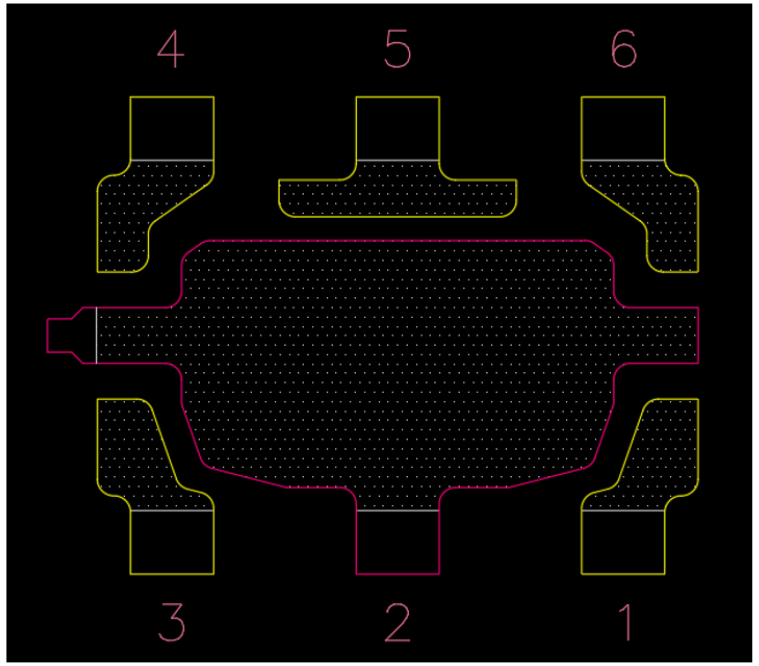


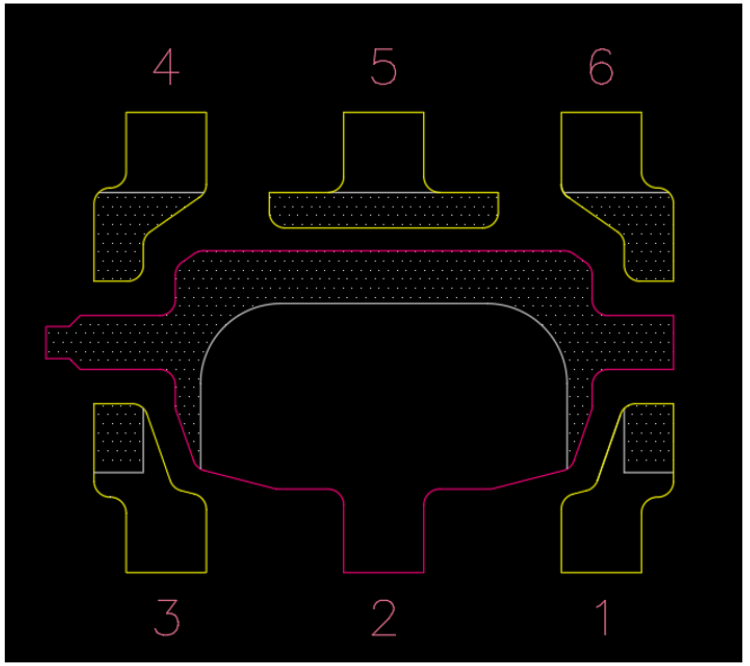
Pre and Post Change Summary

Pre Change



Lead-Frame Material	CDA194
DAP Surface Prep	Ag Spot Plated

Post Change



Lead-Frame Material	A194
DAP Surface Prep	Ag single ring Plated

Note: C194, A194, or CDA194 Lead-frame material are the same, it is just a MCHP internal labelling difference.
*Not fit to scale

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: ALAN-10KOZF594

Date:
January 14, 2025

Qualification palladium coated copper with gold flash (CuPdAu) as a new bond wire material for selected MCP3421, MCP4725, MCP4726, MCP4706, MCP4716, MCP9510, MCP47DA1, MCP4023, MCP4022, MCP4013, MCP4012, and MCP3425 device families available in 6L SOT-23 package.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification palladium coated copper with gold flash (CuPdAu) as a new bond wire material for selected MCP3421, MCP4725, MCP4726, MCP4706, MCP4716, MCP9510, MCP47DA1, MCP4023, MCP4022, MCP4013, MCP4012, and MCP3425 device families available in 6L SOT-23 package.
CN	E000252896
QUAL ID	R2401511 Rev. A
MP CODE	DFBE1YC8XAA0
Part No.	MCP4706A0T-E/CH
Bonding No.	BD-002754 Rev. 01
CCB No.	7276
Package	
Type	6L SOT-23
Lead Frame	
Paddle size	72 x 41 mils
Material	A194
Surface	Ag single ring Plated
Process	Stamped
Lead Lock	No
Part Number	10100607
Treatment	BOT
Material	
Epoxy	84-3J
Wire	CuPdAu wire
Mold Compound	G600V
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI253301572.000	TMPE224408368.430	2446DGP
MTAI253400843.000	TMPE224408368.430	2447ES7
MTAI253400897.000	TMPE224408368.430	2447EUC

Result [X] Pass [ ] Fail [ ] _____

6L SOT-23 assembled by MTAI 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 and 125°C System: J750_MSO	JESD22-A113	693(0)	0/693	Pass	Good Devices
	Bake 150°C, 24 hrs. System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C and 125°C System: J750_MSO		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: J750_MSO		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>3.00 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: J750_MSO		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt :** Vdd= 5.0 Volts System: HAST 6000X	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 125°C System: J750_MSO		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: TPS Bake Oven **Electrical Test:** +25°C and 125°C System: J750_MSO	JESD22-A103	 135(0)	0/135 0/135	 Pass	45 units / lot
Bond Strength **Data Assembly**	Wire Pull (>3.00 grams) Bond Shear (>15.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30(0) Wires 30(0) bonds	0/30 0/30	Pass Pass	