



## Product Change Notification - KSRA-14BTOQ605

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**Date:**

25 Oct 2019

**Product Category:**

Power Management - Power Switches

**Affected CPNs:****Notification subject:**

CCB 3561 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for Micrel MIC2026A and MIC2076A device families available in 8L SOIC package at UNIS assembly site.

**Notification text:****PCN Status:**

Final notification

**PCN Type:**

Manufacturing Change

**Microchip Parts Affected:**

Please open one of the icons found in the Affected CPNs section above.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

**Description of Change:**

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for Micrel MIC2026A and MIC2076A device families available in 8L SOIC package at UNIS assembly site.

**Pre Change:**

Using gold (Au) bond wire.

**Post Change:**

Using palladium coated copper with gold flash (CuPdAu) bond wire.

**Pre and Post Change Summary:**

	Pre Change	Post Change
<b>Assembly Site</b>	Unisem (M) Berhad Perak, Malaysia (UNIS)	Unisem (M) Berhad Perak, Malaysia (UNIS)
<b>Wire material</b>	Au	CuPdAu
<b>Die attach material</b>	8290	8290
<b>Molding compound material</b>	G600	G600
<b>Lead frame material</b>	A194FH	A194FH

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve manufacturability by qualifying CuPdAu bond wire at UNIS assembly site.

**Change Implementation Status:**

In Progress

**Estimated First Ship Date:**

November 25, 2019 (date code: 1948)



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

**Time Table Summary:**

	January 2019					->	October 2019					November 2019			
Workweek	01	02	03	04	05		40	41	42	43	44	45	46	47	48
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:**

**January 18, 2019:** Issued initial notification.

**October 25, 2019:** Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on November 25, 2019.

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

**Attachment(s):**

[PCN\\_KSRA-14BTOQ605\\_Qual\\_Report.pdf](#)

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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)

MIC2026A-1YM

MIC2026A-1YM-TR

MIC2026A-2YM

MIC2026A-2YM-TR

MIC2076A-1YM

MIC2076A-1YM-TR

MIC2076A-2YM

MIC2076A-2YM-TR

SPN011029G

SPN011029G-TR



# **QUALIFICATION REPORT SUMMARY**

**PCN #: KSRA-14BTOQ605**

**Date:  
October 15, 2019**

**Qualification of palladium coated copper with gold flash (CuPdAu)  
bond wire for Micrel MIC2026A and MIC2076A device families  
available in 8L SOIC package at UNIS assembly site.**

**Purpose: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for Micrel MIC2026A and MIC2076A device families available in 8L SOIC package at UNIS assembly site.**

**I. Summary:**

In keeping with guidelines established in Microchip specification QCI-39000 and following requirements from CCB#3561, three assembly qual lots of device# MIC2026A-2YM in SOIC-8L CuPdAu Wire bonding package were used for qualification, with package assembly at Unisem Ipoh, Malaysia.

**Conclusion:**

Based on the test results, the MIC2026A-2YM in SOIC-8L CuPdAu Wire bonding package at Unisem Ipoh pass the reliability tests required for release to production.

**II. Device Description:**

Device	MIC2026A-2YM
Document Control Number	ML1020190045
Document Revision	A
CCB No.	3561

**III. Package Qualification Material:**

Test Lot	Lot 1	Lot 2	Lot 3
WAFER LOT	MCSO519019108.110	MCSO519019108.110	MCSO519019108.110
ASSEMBLY LOT	UNIS194900069.000	UNIS194900071.000	UNIS194900073.000
PACKAGE	SOIC-8L	SOIC-8L	SOIC-8L
QUAL TESTS	HTSL, PRECOND, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC

#### IV. Package BOM

<b>Misc.</b>	Assembly site	UNIS
	BD Number	BDM-002060/A
	MP Code (MPC)	29603T3BXA02
	Part Number (CPN)	MIC2026A-2YM TR
<b>Lead-Frame</b>	Paddle size	80x80 mils
	Material	A194FH
	DAP Surface Prep	Rough PPF
	Treatment	no
	Process	stamp
	Lead-lock	No
	Part Number	40940112
	Lead Plating	NiPdAu
	Strip Size	2.000x8.988 inch
	Strip Density	140
<b>Bond Wire</b>	Material	CuPdAu
<b>Die Attach</b>	Part Number	8290
	Conductive	Yes
<b>MC</b>	Part Number	G600
<b>PKG</b>	PKG Type	SOIC
	Pin/Ball Count	8
<b>Die</b>	Die Thickness	12 mils
	Die Size	1.270 mm X 1.430 mm
	Fab Process (site)	BCD05 / MCS06

## V. Qualification Data:

### Package Preconditioning:

Test Method/Condition	JEDEC J-STD-020 and JESD22-A113, MSL Level 1 soak at +85°C/85%RH/168HRS and 260°C peak Reflow Temperature
Lot #	ATE Test Results (Fail/Pass)
Lot 1	0/252
Lot 2	0/255
Lot 3	0/255

Pre and Post testing was conducted at +25°C (Lot 1,2,3) and +85°C (Lot 1)

### HAST (Highly Accelerated Temperature and Humidity Stress Test)

Test Method/Condition	JESD22-A110, Vin = +5.5V, Ta = +130°C/85%RH, 96 HRS and 192HRS
Lot #	Results (Fail/Pass)
Lot 1	0/82 @ 96HRS, 0/82 @ 192HRS
Lot 2	0/82 @ 96HRS, 0/82 @ 192HRS
Lot 3	0/82 @ 96HRS, 0/82 @ 192HRS

Pre and Post testing was conducted at +25°C (Lot 1,2,3) and +85°C (Lot 1)

### UNBIASED HAST

Test Method/Condition	JESD22-A118, Ta = +130°C/85%RH, 96HRS and 192HRS
Lot #	Results (Fail/Pass)
Lot 1	0/82 @ 96HRS, 0/82 @ 192HRS
Lot 2	0/82 @ 96HRS, 0/82 @ 192HRS
Lot 3	0/82 @ 96HRS, 0/82 @ 192HRS

Pre and Post testing was conducted at +25°C

### Temperature Cycling

Test Method/Condition	JESD22-A104, Ta = -65°C/+150 °C, 500 Cycles and 1000 Cycles
Lot #	Results (Fail/Pass)
Lot 1	0/82 @ 500CYC, WBP pass. 0/77 @ 1000CYC
Lot 2	0/82 @ 500CYC, 0/82 @ 1000CYC
Lot 3	0/82 @ 500CYC, 0/82 @ 1000CYC

Pre and Post testing was conducted at +25°C (Lot 1,2,3) and +85°C (Lot 1)

### High Temperature Storage Life

Test Method/Condition	JESD22-A103, Ta = +150 °C, 1008 HRS
Lot #	Results (Fail/Pass)
Lot 1	0/50

Pre and Post testing was conducted at +25°C

### Solderability Tests (JESD22B-102E)

LOT 1 :

Test Item	(Rej / SS)	Comment
Solder Dip	0/10	Passed
Steam Age	0/5	Passed

LOT 2 :

Test Item	(Rej / SS)	Comment
Solder Dip	0/10	Passed
Steam Age	0/5	Passed

LOT 3 :

Test Item	(Rej / SS)	Comment
Solder Dip	0/22	Passed
Steam Age	0/22	Passed

**Wire Bond Pull (Mil Std 883-TM2011)**

LOT 1 :

<b>Test Item</b>	<b>Sample Size/Unit</b>	<b>Comment</b>
Wire Pull	30 wires / 5 units	Passed

**Wire Ball Shear (AEC-Q100-001)**

LOT 1 :

<b>Test Item</b>	<b>Sample Size/Unit</b>	<b>Comment</b>
Ball Shear	45 balls / 5 units	Passed

**XRAY/Wire Sweep:**

LOT 1 :

<b>Test Item</b>	<b>(Rej / SS)</b>	<b>Comment</b>
Wire Sweep	0 / 280 units	Passed
Internal Void	0 / 280 units	Passed

LOT 2 :

<b>Test Item</b>	<b>(Rej / SS)</b>	<b>Comment</b>
Wire Sweep	0 / 280 units	Passed
Internal Void	0 / 280 units	Passed

LOT 3 :

<b>Test Item</b>	<b>(Rej / SS)</b>	<b>Comment</b>
Wire Sweep	0 / 280 units	Passed
Internal Void	0 / 280 units	Passed

**Physical Dimensions:**

<b>Test Method / Condition</b>	<b>(JESD22-B100 &amp; B108)</b>
Lot #	Results (Fail/ Passed)
Lot 1	0/10 Pass
Lot 2	0/10 Pass
Lot 3	0/10 Pass