



Product Change Notification / RMES-20UKIQ053

Date:

21-Oct-2020

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4410 Initial Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 64L LQFP (10x10x1.4mm) package using 236 x 236 mils lead frame paddle size at ANAP assembly site.

Affected CPNs:

[RMES-20UKIQ053_Affected_CPN_10212020.pdf](#)

[RMES-20UKIQ053_Affected_CPN_10212020.csv](#)

Notification Text:

PCN Status: Initial 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 selected products available in 64L LQFP (10x10x1.4mm) package using 236 x 236 mils lead frame paddle size at ANAP assembly site.

Pre Change:

Using palladium copper bond wire (CuPd) **or** palladium gold (AuPd) with 236 x 236 mils **or** 197 x 197 mils paddle size

Post Change:

Using palladium coated copper with gold flash (CuPdAu) bond wire with 236 x 236 mils paddle size

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Amkor Technology Philippine (P1/P2), INC. (ANAP)	Amkor Technology Philippine (P1/P2), INC. (ANAP)
Lead frame material	C194	C194
Paddle size	236 x 236 mils or 197 x 197 mils	236 x 236 mils
Bond wire material	CuPd or AuPd	CuPdAu
Die attach material	3230	3230
Mold compound material	G700	G700

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying palladium coated copper with gold flash (CuPdAu) bond wire using 236 x 236 mils lead frame paddle size at ANAP assembly site.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: April 2021

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:

	October 2020					>	April 2021				
Workweek	4 0	4 1	4 2	4 3	4 4		1 4	1 5	1 6	1 7	18
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: October 21, 2020: 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_RMES-20UKIQ053_Qual_Plan.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.

RMES-20UKIQ053 - CCB 4410 Initial Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 64L LQFP (10x10x1.4mm) package using 236 x 236 mils lead frame paddle size at ANAP assembly site.

Affected Catalog Part Numbers (CPN)

AT89C51ED2-RDTUM
AT89C51ED2WOW-RDTUM
AT89C51RD2-RDTUM
AT89C51ED2-RDRUM
AT89C51AC3-RDTUM
AT89C51CC03UA-RDTUM
AT89C51CC03CA-RDTUM
AT89C5130A-RDTUM
AT89C5131A-RDTUM
AT89C5130A-RDRUM
AT89C5131A-RDTUL



MICROCHIP

QUALIFICATION PLAN SUMMARY

PCN #: RMES-20UKIQ053

Date:

October 15, 2020

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 64L LQFP (10x10x1.4mm) package using 236 x 236 mils lead frame paddle size at ANAP assembly site.

Purpose: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 64L LQFP (10x10x1.4mm) package using 236 x 236 mils lead frame paddle size at ANAP assembly site.

CCB No. 4410

<u>Misc.</u>	Assembly site	ANAP
	BD Number	TBD
	MP Code (MPC)	568TL7V6XC06
	Part Number (CPN)	AT89C51CC03CA-RDTUM
	MSL information	MSL-3 @260C
	Assembly Shipping Media (T/R, Tube/Tray)	Tray
	Base Quantity Multiple (BQM)	160 units
	Reliability Site	MPHIL
<u>Lead-Frame</u>	Paddle size	236x236 mil
	Material	C194
	DAP Surface Prep	Double Ring Ag
	Treatment	None
	Process	Stamped
	Lead-lock	No
	Part Number	101383991
	Lead Plating	Matte Tin
	Strip Density	VHDLF
<u>Bond Wire</u>	Material	CuPdAu
<u>Die Attach</u>	Part Number	3230
	Conductive	Yes
<u>MC</u>	Part Number	G700
<u>PKG</u>	PKG Type	LQFP
	Pin/Ball Count	64
	PKG width/size	10x10x1.4mm

Test Name	Conditions	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	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hour 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		MPHIL	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability-SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5		ATP	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5		ATP	30 bonds from a min. 5 devices.
Wire Sweep									ATP	Required for any reduction in wire bond thickness.
Physical Dimmensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5		ATP	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5		ATP	

Test Name	Conditions	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	Special Instructions
Preconditioning - Required for surface mount devices	+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; Electrical test pre and post stress at +25°C. MSL-3 @260C	231	15	3	738	0	15	MPHIL	MPHIL	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	+130°C/85% RH for 96 hours/192 hours Electrical test pre and post stress at +25°C and hot temp.	77	5	3	246	0	10	MPHIL	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	+130°C/85% RH for 96 hrs/192 hrs Electrical test pre and post stress at +25°C	77	5	3	246	0	10	MPHIL	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles/1000 cycles Electrical test pre and post stress at hot temp; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	MPHIL	MPHIL	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.