Product Change Notification - JAON-29WASP224

Date:
04 Mar 2019
Product Category:
8-bit Microcontrollers
Affected CPNs:

Notification subject:
CCB 3703 Initial Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected Atmel products of the 35.5K wafer technology available in 64L VQFN packages at NSEB assembly site.
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 Atmel products of the 35.5K wafer technology available in 64L VQFN packages at NSEB assembly site.
Pre-Change:
Assembled using gold (Au) bond wire, 8200T die attach and G770HCD molding compound material.
Post Change:
Assembled using palladium coated copper with gold flash (CuPdAu) bond wire, 8600 die attach and G700LTD molding compound material.
Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	UTAC Thai Limited / NSEB	UTAC Thai Limited / NSEB
Wire material	Au	CuPdAu
Die attach material	8200T	8600
Molding compound material	G770HCD	G700LTD
Lead frame material	EFTEC 64T	EFTEC 64T

Impacts to Data Sheet:
None
Change Impact:
None
Reason for Change:
To improve productivity by qualifying palladium coated copper with gold flash (CuPdAu) bond wire, 8600 die attach and G700LTD molding compound material.
Change Implementation Status:
In Progress
Estimated Qualification Completion Date:
July 2019

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:

	March 2019				-->	July 2019				
Workweek	10	11	12	13		27	28	29	30	31
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:

March 4, 2019: 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.

Attachment(s):

PCN_JAON-29WASP224_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.

Affected Catalog Part Numbers (CPN)

AT90CAN32-15MT
AT90CAN32-15MT1
AT90CAN32-15MZ
AT90CAN32-16MU
AT90CAN32-16MUR

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QUALIFICATION PLAN SUMMARY

PCN #: JAON-29WASP224

Date
Jan 24, 2019

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected Atmel products of the 35.5K wafer technology available in 64L VQFN packages at NSEB assembly site.

Purpose: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected Atmel products of the 35.5K wafer technology available in 64L VQFN packages at NSEB assembly site.
CCB No.: 3703
MSL: 3

Package/Die Data:

Misc.	Assembly site	UTAC
	BD Number	BDM-002059A
	MP Code (MPC)	355T4YTLBC01
	Part Number (CPN)	AT90CAN32-15MZ
Lead-Frame	Paddle size	6.7x6.7
	Material	EFTEC 64T
	DAP Surface Prep	Non rough
	Treatment	Yes (In house roughening)
	Process	Etched
	Lead-lock	Yes
	Part Number	FR0160
	Lead Plating	Selective Ag (Finger only)
	Strip Size	70x250mm
	Strip Density	120 unit/strip
Bond Wire	Material	CuPdAu
Die Attach	Part Number	8600
	Conductive	Conductive
MC	Part Number	G700LTD
PKG	PKG Type	QFN
	Pin/Ball Count	64
	PKG width/size	9x9x0.85
Die	Die Thickness	11 mil
	Die Size	166x179 mil
	Fab Process (site)	MCSO 6”

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature		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	Pkg. Type	Special Instructions
		-40°C to +125°C datasheet operating range (Grade 1/E-Temp)	-40°C to +125°C datasheet operating range (Grade 1/E-Temp)	-40°C to +150°C datasheet operating range (Grade 0/H-Temp)										
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours of 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	Utac/MPHIL	vQFN	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				3	0	3	30 wires/balls from the total sample size specified.	0 fails after TC	5	MPHIL	Utac/MPHIL	vQFN	
Wire Bond Shear - WBS	CDF-AEC-Q100-001				3	0	3	30 wires/balls from the total sample size specified.		5	MPHIL	Utac/MPHIL	vQFN	
Physical Dimensions	Measure per JESD22 B100 and B108				10	0	3	30	0	5	MPHIL	Utac/MPHIL	vQFN	
External Visual	Mil. Std. 883-2009/2010				All devices prior to submission for qualification testing	0	3	ALL	0	5	MPHIL	Utac/MPHIL	vQFN	
HTSL (High Temp Storage Life)	JESD22A-103. +175°C, **2x Stress** Electrical test pre and post stress at +25°C and hot temp.	500 hrs, 1000 hrs		+25°C, +85°C, +125°C, +150°C.	45	5	**3**	150	0	10	MPHIL	Utac/MPHIL	vQFN	Perform per the requirements in AEC-Q100/Q101. Spares should be properly identified.
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 and hot temp. MSL3 @+260°C		+25°C, +85°C, +125°C		231	15	3	738	0	15	MPHIL	Utac/MPHIL	vQFN	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.
uHAST	+130°C/85% RH for 96hrs + 192hrs. Electrical test pre and post stress at +25°C	96 hrs + 192 hrs	+25°C		77	5	3	246	0	15	MPHIL	Utac/MPHIL	vQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
HAST	+130°C/85% RH for 96hrs + 192hrs. Electrical test pre and post stress at +25°C and hot temp.	96 hrs + 192 hrs	+25°C, +85°C, +125°C		77	5	3	246	0	15	MPHIL	Utac/MPHIL	vQFN	Perform per the requirements in AEC-Q006. Spares should be properly identified.
Temp Cycle	PC before TC		+85°C,		77	5	3	246	0	15	MPHIL	Utac/MPHIL	vQFN	Perform per the

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature		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	Pkg. Type	Special Instructions
		-40°C to +125°C datasheet operating range (Grade 1/E-Temp)	-40°C to +125°C datasheet operating range (Grade 1/E-Temp)	-40°C to +150°C datasheet operating range (Grade 0/H-Temp)										
	Grade 0: -55°C to +150°C for 1500 cycles (1x stress); 3000 cycles (2x stress).	500 cycles (1x stress); 1000 cycles (2x stress).	+125°C											requirements in AEC-Q006. Spares should be properly identified.