Product Change Notification - KSRA-03AYHE005

Date:

07 Aug 2018

Product Category:

8-bit Microcontrollers; Capacitive Touch Sensors

Affected CPNs:

Notification subject:

CCB 3296 Final PCN: Qualification of gold (Au) bond wire as secondary wire material for selected Atmel products available in 44L TQFP (10x10x1.0mm) package at MTAI 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 gold (Au) bond wire as secondary wire material for selected Atmel products available in 44L TQFP (10x10x1.0mm) package at MTAI Assembly site

Pre Change:

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

Post Change:

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

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	Microchip Technology Thailand (HQ) / MTAI	Microchip Technology Thailand (HQ) / MTAI	Microchip Technology Thailand (HQ) / MTAI
Wire material	CuPdAu	CuPdAu	Au
Die attach material	3280	3280	3280
Molding compound material	G700HA	G700HA	G700HA
Lead frame material	C7025	C7025	C7025

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve on-time delivery performance by qualifying gold (Au) bond wire for selected Atmel devices at MTAI assembly site.|

Change Implementation Status:

In Progress

Estimated First Ship Date:

September 07, 2018 (date code: 1836)

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

Time Table Summary:

	May2018					->	August 2018					September 2018				
Workweek	18	19	20	21	22		31	32	33	34	35	36	37	38	39	40
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:

May 07, 2018: Issued initial notification.

August 07, 2018: Issued final notification. Attached the qualification report and added estimated first date by September 07, 2018.

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-03AYHE005_Qual_Report.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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Affected Catalog Part Numbers (CPN)

AT42QT1481-AU
AT42QT1481-AUR
AT42QT2640-AU
AT42QT2640-AUR
ATMEGA1284-AU
ATMEGA1284-AUR
ATMEGA1284P-AU
ATMEGA1284P-AUR
ATMEGA16-16AU
ATMEGA16-16AUA2
ATMEGA16-16AUR
ATMEGA164A-AU
ATMEGA164A-AUA2
ATMEGA164A-AUR
ATMEGA164A-AURA2
ATMEGA164PA-AN
ATMEGA164PA-ANR
ATMEGA164PA-AU
ATMEGA164PA-AUR
ATMEGA16A-AU
ATMEGA16A-AUA9
ATMEGA16A-AUR
ATMEGA16A-AURA3
ATMEGA16A-AURA4
ATMEGA16A-AURA8
ATMEGA16L-8AU
ATMEGA16L-8AUA7
ATMEGA16L-8AUR
ATMEGA16L-8AURA1
ATMEGA16U4-AU
ATMEGA16U4-AUR
ATMEGA16U4RC-AU
ATMEGA32-16AU
ATMEGA32-16AUR
ATMEGA324A-AU
ATMEGA324A-AUR
ATMEGA324A-AURA3
ATMEGA324PA-AN
ATMEGA324PA-ANR
ATMEGA324PA-AU
ATMEGA324PA-AUA1
ATMEGA324PA-AUR
ATMEGA32A-AN
ATMEGA32A-ANR
ATMEGA32A-AU
ATMEGA32A-AUR

ATMEGA32A-AUR626

ATMEGA32A-AURA5

ATMEGA32A-AURA6

ATMEGA32A-AURA7

ATMEGA32L-8AU

ATMEGA32L-8AUR

ATMEGA32U4-AU

ATMEGA32U4-AUR

ATMEGA32U4RC-AU

ATMEGA32U4RC-AUR

ATMEGA644A-AU

ATMEGA644A-AUR

ATMEGA644PA-AN

ATMEGA644PA-ANR

ATMEGA644PA-AU

ATMEGA644PA-AUR

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: KSRA-03AYHE005

Date:
July 13, 2018

Qualification of gold (Au) bond wire as secondary wire material for selected Atmel products available in 44L TQFP (10x10x1.0mm) package at MTAI Assembly site

MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose: **Qualification of gold (Au) bond wire as secondary wire material for selected Atmel products available in 44L TQFP (10x10x1.0mm) package at MTAI Assembly site.**

CCB Number: **3296**

Misc.	**Assembly site**	MTAI
	BD Number	BDM-001705 rev.A
	MP Code (MPC)	354787T4XC01
	Part Number (CPN)	ATMEGA644
Lead-Frame	**Paddle size**	180x180 mils
	Material	C7025
	Surface	Bare Cu on paddle
	Treatment	Roughening
	Process	Stamped
	Lead-lock	No
	Part Number	10104412
	Lead Plating	Matte Tin
Bond Wire	**Material**	Au
Die Attach	**Part Number**	3280
	Conductive	Yes
MC	**Part Number**	G700HA
PKG	**PKG Type**	TQFP
	Pin/Ball Count	44
	PKG width/size	10x10 mm
Die	**Die Thickness**	11 mils
	Die Size	164.4 x 119.8 mils
	MSL	MSL1/260

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PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
MTAI184804027.000	MCSO518476707.100	18089QW
MTAI184804028.000	MCSO518476707.100	18089QY
MTAI184804029.000	MCSO518476707.100	18089R0

Result [X] Pass [ ] Fail [ ] ____________________

Atmel 35478 using Au wire in 44L TQFP 10x10 package at MTAI is qualified at Moisture/ Reflow Sensitivity Classification Level 1 per IPC/JEDEC J-STD-020D standard. No delamination were observed on all the units.

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 : +**90°C 0hr CSAM Bake 150°C, 24 hrs System: HERAEUS 85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 265°C max System: Mancorp CR.5000F Post CSAM **Electrical Test :**+90°C	JESD22-A113 IPC/JEDEC J-STD-020D	958(0) 135(0) 958(0) 958(0) 958(0) 135(0) 958(0)	0/958 0/135 0/135 0/958	 Passed Passed Passed	Good Devices
Temp Cycle	**Stress Condition:** (Standard) 65°C to +150°C, 500 Cycles System : VOTSCH VT 7012 S2	JESD22-A104	252			Parts had been pre-conditioned at 260°C
	Electrical Test: 90°C, System: MAGNUM05 (Handtest)		252(0)	0/252	Passed	
	Bond Strength: Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)		15(0)	0/15	Passed	
UNBIASED-HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:** +90°C System: MT9510 Handler:2580	JESD22-A118	252 252(0)	 0/252	 Passed	Parts had been pre-conditioned at 260°C

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HIRAYAMA HASTEST PC-422R8 **Electrical Test:**+90°C System: MT9510 Handler:2580	JESD22-A110	250 250(0)	0/250	Passed	Parts had been pre-conditioned at 260°C
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: HERAEUS **Electrical Test :+**90°C	JESD22-A103	50 50(0)	0/50	Passed	50 units
Solderability **Temp 245°C**	**Bake:** Temp 155°C,4Hrs System:Oven Solder Bath: Temp.245°C Solder material: SnPb Visual Inspection: External Visual Inspection	JESD22B-102E	15 (0)	0/15	Passed	Performed at MPHIL
Bond Strength **Data Assembly**	Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)	M2011.8 MIL-STD-883 M2011.8 MIL-STD-883	30(0) Wires 30(0) Wires		Passed	