Product Change Notification / RMES-18HGMY370

Date:

19-Mar-2021

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3296.003 Final Notice: Qualification of gold (Au) bond wire for selected Atmel ATTINY88xx, ATTINY48xx, ATMEGA88PAxx, ATMEGA168PAx, ATMEGA8Axx, ATMEGA328x and ATMEGA48xx device families available in 32L TQFP (7x7x1mm) package

Affected CPNs:

RMES-18HGMY370_Affected_CPN_03192021.pdf
RMES-18HGMY370_Affected_CPN_03192021.csv

Notification Text:

PCN Status: Final Notice

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 of gold (Au) bond wire for selected Atmel ATTINY88xx, ATTINY48xx, ATMEGA88PAxx, ATMEGA168PAx, ATMEGA8Axx, ATMEGA328x and ATMEGA48xx device families available in 32L TQFP (7x7x1mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

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

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve manufacturability and on-time delivery performance by qualifying gold (Au) bond wire.

Change Implementation Status: In Progress

Estimated First Ship Date: March 31, 2021 (date code: 2114)

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

Time Table Summary:

	March 2021				
Workweek	10	11	12	13	14
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: March 19, 2021: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on March 31, 2021.

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-18HGMY370_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.

Affected Catalog Part Numbers (CPN)

ATTINY88-AU
ATTINY88-AUR
ATTINY48-AU
ATTINY48-AUR
ATMEGA88PA-AU
ATMEGA88PA-AUR
ATMEGA168PA-AU
ATMEGA168PA-AUR
ATMEGA8A-AU
ATMEGA8A-AU-HCM
ATMEGA8A-AUR
ATMEGA328-AU
ATMEGA328P-AU
ATMEGA328-AUR
ATMEGA328P-AUR
ATMEGA48A-AU
ATMEGA48PA-AU
ATMEGA48A-AUR
ATMEGA48PA-AUR

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: RMES-18HGMY370

Date:
March 18, 2021

Qualification of MTAI as an additional assembly site for selected Atmel products available in 44L TQFP 10x10x1mm package. The qualification of gold (Au) bond wire for selected Atmel ATTINY88xx, ATTINY48xx, ATMEGA88PAxx, ATMEGA168PAx, ATMEGA8Axx, ATMEGA328x and ATMEGA48xx device families available in 32L TQFP (7x7x1mm) package will be qualify by similarity (QBS).

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PACKAGE QUALIFICATION REPORT

Purpose: Qualification of MTAI as an additional assembly site for selected Atmel products available in 44L TQFP 10x10x1mm package. The qualification of gold (Au) bond wire for selected Atmel ATTINY88xx, ATTINY48xx, ATMEGA88PAxx, ATMEGA168PAx, ATMEGA8Axx, ATMEGA328x and ATMEGA48xx device families available in 32L TQFP (7x7x1mm) package will be qualify by similarity (QBS).

Misc.	Assembly site	MTAI
	BD Number	BDM-001705 rev.A
	MP Code (MPC)	354787T4XC01
	Part Number (CPN)	ATMEGA644
	CCB No.	3296, 3296.001 and 3296.003
	QTP No. and Rev	3393 Rev A
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
Mold Compound	Part Number	G700HA
PKG	PKG Type	TQFP
	Pin/Ball Count	44
	PKG width/size	10x10 mm
	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	JESD22-A113	958(0)	0/958		Good Devices
			135(0)	0/135	Passed	
	Bake 150°C, 24 hrs System: HERAEUS		958(0)			
	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D	958(0)			
	3x Convection-Reflow 265°C max System: Mancorp CR.5000F		958(0)			
			135(0)	0/135	Passed	
	Electrical Test :+90°C		958(0)	0/958	Passed	
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	JESD22-A118	252			Parts had been pre-conditioned at 260°C
	Electrical Test: +90°C System: MT9510 Handler:2580		252(0)	0/252	Passed	

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	