

**Product Change Notification - RMES-13GYEY379**


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**Date:**

27 May 2019

**Product Category:**

Others; 32-bit Microcontrollers

**Affected CPNs:**

**Notification subject:**

CCB 3059.001 Final Notice: Qualification of MTAI as an additional assembly site for selected Atmel products available in 48L TQFP (7x7x1.0mm) package using gold (Au) wire.

**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 MTAI as an additional assembly site for selected Atmel products available in 48L TQFP (7x7x1.0mm) package using gold (Au) wire.

**Pre Change:**

Assembled at ASCL Assembly site

**Post Change:**

Assembled at ASCL and MTAI Assembly site

**Pre and Post Change Summary:**

	Pre Change	Post Change	
<b>Assembly Site</b>	ASE Group Chung-Li / ASCL	ASE Group Chung-Li / ASCL	Microchip Technology Thailand (HQ) / MTAI
<b>Wire material</b>	CuPdAu	CuPdAu	Au
<b>Die attach material</b>	EN-4900GC	EN-4900GC	3280
<b>Molding compound material</b>	G700	G700	G700
<b>Lead frame material</b>	C194	C194	C7025

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve productivity by qualifying MTAI as an additional assembly site

**Change Implementation Status:**

In Progress

**Estimated First Ship Date**

June 27, 2019 (date code: 1926)

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

**Time Table Summary:**

	May 2019					June 2019				
Workweek	18	19	20	21	22	23	24	25	26	27
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 27, 2019:** Issued final notification. Attached the qualification report. Provided estimated first ship date on June 27, 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\\_RMES-13GYEY379\\_Qual Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

**Terms and Conditions:**

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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)

ATSAMC20G15A-ANT  
ATSAMC20G15A-AUT  
ATSAMC20G15A-AZ  
ATSAMC20G15A-AZT  
ATSAMC20G16A-ANT  
ATSAMC20G16A-AUT  
ATSAMC20G16A-AZ  
ATSAMC20G16A-AZT  
ATSAMC20G17A-ANT  
ATSAMC20G17A-AUT  
ATSAMC20G17A-AZ  
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ATSAML21G18B-ANT  
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ATSAML22G16A-AUT  
ATSAML22G17A-AUT  
ATSAML22G18A-AUT



**MICROCHIP**

**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN #: RMES-13GYEY379**

**Date:**  
**July 25, 2018**

**Qualification of MTAI as an additional assembly site for selected Atmel products available in 64L TQFP (10x10x1.0mm) package using gold (Au) wire. The selected products available in 48L TQFP (7x7x1.0mm) package will qualify by similarity (QBS).**



## MICROCHIP PACKAGE QUALIFICATION REPORT

**Purpose:** Qualification of MTAI as an additional assembly site for selected Atmel products available in 64L TQFP (10x10x1.0mm) package using gold (Au) wire. The selected products available in 48L TQFP (7x7x1.0mm) package will qualify by similarity (QBS).

**CCB No.:** 3059 and 3059.001

<b><u>Misc.</u></b>	<b>Assembly site</b>	<b>MTAI</b>
	<b>BD Number</b>	<b>BDM-001430</b>
	<b>MP Code (MPC)</b>	<b>661P2QV2XC08</b>
	<b>Part Number (CPN)</b>	<b>ATSAMC21J18A-ANT</b>
<b><u>Lead-Frame</u></b>	<b>Paddle size</b>	<b>200x200 mils</b>
	<b>Material</b>	<b>C7025</b>
	<b>Surface</b>	<b>Bare Cu paddle, Ag on leads</b>
	<b>Treatment</b>	<b>Brown oxide treatment (BOT)</b>
	<b>Process</b>	<b>Stamped</b>
	<b>Lead-lock</b>	<b>No</b>
	<b>Part Number</b>	<b>10106403</b>
	<b>Lead Plating</b>	<b>Matte Tin</b>
<b><u>Bond Wire</u></b>	<b>Material</b>	<b>Au</b>
<b><u>Die Attach</u></b>	<b>Part Number</b>	<b>3280</b>
	<b>Conductive</b>	<b>Yes</b>
<b><u>MC</u></b>	<b>Part Number</b>	<b>G700HA</b>
<b><u>PKG</u></b>	<b>PKG Type</b>	<b>TQFP</b>
	<b>Pin/Ball Count</b>	<b>64</b>
	<b>PKG width/size</b>	<b>10x10x1.0mm</b>
<b><u>Die</u></b>	<b>Die Thickness</b>	<b>11 mils</b>
	<b>Die Size</b>	<b>134.3 x 123.5 mils</b>
	<b>MSL</b>	<b>MSL1/260</b>



## MICROCHIP PACKAGE QUALIFICATION REPORT

### Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI181803702.000	U08D918167042.100	1730J2H
MTAI181803708.000	U08D918167042.200	1730MGR
MTAI181803707.000	U08D918167042.100	1730MGQ

**Result**

Pass

Fail

SAMCA1 661P2 in 64L TQFP 10x10 package assembled at MTAI pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package is qualified Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard.



# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<b>Moisture/Reflow w Sensitivity Classification Test (At MSL Level 1)</b>	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE 3x Convection-Reflow 265°C max System: Mancorp CR.5000F  ( IPC/JEDEC J-STD-020D)	IPC/JEDEC	45 units per lot	Lot 1 0/45	Pass	
				Lot 2 0/45	Pass	
				Lot 3 0/45	Pass	
<b>Precondition Prior Perform Reliability Tests (At MSL Level 1)</b>	<b>Electrical Test</b> :+25°C System: Magnum  Bake 125°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  <b>Electrical Test</b> :+25°C System: Magnum	JESD22- A113	460 units per lot	Lot 1 0/458	Pass	Good Devices
				Lot 2 0/460	Pass	
				Lot 3 0/460	Pass	
<b>Temp Cycle</b>	<b>Stress Condition:</b> (Standard) 65°C to +150°C, 500 Cycles System : Votsch VTS <sup>2</sup> 7012  <b>Electrical Test:</b> +25°C, 125°C System: Magnum	JESD22- A104	90 units per lot	Lot 1 0/88	Pass	Parts had been pre- conditioned at 260°C
				Lot 2 0/90	Pass	
				Lot 3 0/87	Pass	
	<b>Internal Package Analysis</b> System:		5 units per lot	Lot 1 0/5	Pass	
				Lot 2 0/5	Pass	
				Lot 3 0/5	Pass	
	<b>Bond Strength:</b> Wire Pull (> 1.75 grams) Bond <i>Shear</i> (>12.6 grams) System: Dage		5 units per lot		Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>HAST</b>	<b>Stress Condition:</b> (Standard) + 130°C, 85%RH, 96 hrs. VOLTS=5.5V System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	84 units per lot	Lot 1 0/84	Pass	Parts had been pre-conditioned at 260°C
	Lot 2 0/84			Pass		
	Lot 3 0/84			Pass		
	<b>Bond Strength:</b> Wire Pull (> 1.75 grams) Bond Shear (>12.6 grams) System: Dage		5 units per lot		Pass	
<b>UNBIASED HAST</b>	<b>Stress Condition:</b> (Standard) + 130°C, 85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8	JESD22-A110	80 units per lot	Lot 1 0/80	Passed	Parts had been pre-conditioned at 260°C
	Lot 2 0/80			Passed		
	Lot 3 0/80			Passed		
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 500 hrs System: HERAEUS	JESD22-A103	90 units per lot	Lot 1 0/90	Passed	90 units per lot
	<b>Electrical Test:</b> +25°C, 125°C System: Magnum			Lot 2 0/90	Passed	
				Lot 3 0/90	Passed	
	<b>Bond Strength:</b> Wire Pull (> 1.75 grams) Bond Shear (>12.6 grams) System: Dage		5 units per lot	Lot 1 0/5	Pass	
				Lot 2 0/5	Pass	
				Lot 3 0/5	Pass	
<b>Bond Strength</b>	Wire Pull (> 1.75 grams) Bond Shear (>12.6 grams) System: Dage	M2011.8 MIL-STD-883	5 units per lot	Lot 1 0/5	Pass	
				Lot 2 0/5	Pass	
				Lot 3 0/5	Pass	