

**Product Change Notification - GBNG-23KQCL340**


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**Date:**

13 Nov 2019

**Product Category:**

8-bit Microcontrollers

**Affected CPNs:**

**Notification subject:**

CCB 3600, 3600.001, 3600.002 and 3600.003 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected Atmel products of the 35.4K, 35.5K and 35.8K wafer technologies available in 40L PDIP, 20L PDIP, 8L PDIP and 28L SPDIP packages.

**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 palladium coated copper with gold flash (CuPdAu) bond wire in selected Atmel products of the 35.4K, 35.5K and 35.8K wafer technologies available in 40L PDIP, 20L PDIP, 8L PDIP and 28L SPDIP packages.

**Pre Change:**

Using gold (Au) bond wire.

**Post Change:**

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

**Pre and Post Change Summary:**

	<b>Pre Change</b>	<b>Post Change</b>
<b>Assembly Site</b>	Microchip Technology Thailand (Branch) (MMT)	Microchip Technology Thailand (Branch) (MMT)
<b>Wire material</b>	Au	CuPdAu
<b>Die attach material</b>	CRM-1064L	CRM-1064L
<b>Molding compound material</b>	GE800	GE800
<b>Lead frame material</b>	CDA194	CDA194

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve on-time delivery performance by qualifying palladium coated copper with gold flash (CuPdAu) bond wire.

**Change Implementation Status:**



In Progress

**Estimated First Ship Date:**

December 13, 2019 (date code: 1950)

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

**Time Table Summary:**

	November 2018					->	November 2019					December 2019			
Workweek	44	45	46	47	48		44	45	46	47	48	49	50	51	52
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:**

**November 12, 2018:** Issued initial notification.

**November 13, 2019:** Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on December 13, 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\\_GBNG-23KQCL340\\_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)

AT89LP2052-20PU  
AT89LP4052-20PU  
AT89S2051-24PU  
AT89S4051-24PU  
ATMEGA1284P-PU  
ATMEGA1284-PU  
ATMEGA328P-PU  
ATTINY2313-20PU  
ATTINY2313A-PU  
ATTINY2313V-10PU  
ATTINY26-16PU  
ATTINY261A-PU  
ATTINY26L-8PU  
ATTINY4313-PU  
ATTINY461-20PU  
ATTINY461A-PU  
ATTINY461V-10PU  
ATTINY861-20PU  
ATTINY861A-PU  
ATTINY861V-10PU



# **QUALIFICATION REPORT SUMMARY**

## **RELIABILITY LABORATORY**

**PCN #: GBNG-23KQCL340**

**Date**  
**October 28, 2019**

**Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected Atmel products of the 35.4K, 35.5K and 35.8K wafer technologies available in 40L PDIP package. The selected products available in 20L PDIP, 8L PDIP and 28L SPDIP packages will qualify by similarity (QBS).**



## MICROCHIP PACKAGE QUALIFICATION REPORT

**Purpose: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected Atmel products of the 35.4K, 35.5K and 35.8K wafer technologies available in 40L PDIP package. The selected products available in 20L PDIP, 8L PDIP and 28L SPDIP packages will qualify by similarity (QBS).**

<b>CN</b>	ES303598
<b>QUAL ID</b>	Q19095
<b>MP CODE</b>	354527S2XA01
<b>Part No.</b>	ATMEGA1284P-PU
<b>Bonding No.</b>	BDM-001967 Rev. A
<b>CCB No.</b>	3600, 3600.001, 3600.002, 3600.003

### **Package**

<b>Type</b>	40L PDIP
<b>Package size</b>	600 mils
<b>Die thickness</b>	15 mils
<b>Die size</b>	197.5 x 164.5 mils

### **Lead Frame**

<b>Paddle size</b>	260 x 266 mils
<b>Material</b>	CDA194
<b>Surface</b>	Ag Spot Plated
<b>Process</b>	Stamped
<b>Lead Lock</b>	Yes
<b>Part Number</b>	10104004

### **Die attach material**

<b>Epoxy</b>	CRM-1064L
<b>Wire</b>	CuPdAu wire
<b>Mold Compound</b>	GE800
<b>Plating Composition</b>	Matte Tin



**MICROCHIP**

**PACKAGE QUALIFICATION REPORT**

**Manufacturing Information**

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-201101010.000	MCSO519496553.210	1924EPS
MMT-201101013.000	MCSO519496553.210	1924ERS
MMT-201101391.000	MCSO519496553.210	1924H10

**Result**

Pass

Fail

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40L PDIP (.600") assembled by MMT pass reliability test per QCI-39000.

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Electrical Test</b>	<b>Electrical Test:</b> +25°C and 85°C System: J750	JESD22-A113	693(0)	693		Good Devices
<b>Temp Cycle</b>	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification	JESD22-A104		231		
	<b>Electrical Test:</b> +85°C System: MAV1_PT		231(0)	0/231	Pass	77 units / lot
	<b>Stress Condition:</b> -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification			231		
	<b>Electrical Test:</b> +85°C System: MAV1_PT		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (> 2.50 grams) Bond Shear (15.00 grams)		15 (0)	0/15	Pass	
			15 (0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		
	<b>Electrical Test:</b> +85°C System: MAV1_PT		231(0)	0/231	Pass	77 units / lot
	<b>Stress Condition:</b> +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	<b>Electrical Test:</b> +85°C System: MAV1_PT		231(0)	0/231	Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>HAST</b>	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X	JESD22-A110		231		77 units / lot
	<b>Electrical Test:</b> +85°C System: MAV1_PT		231(0)	0/231	Pass	
	<b>Stress Condition:</b> +130°C/85%RH, 192 hrs. <b>Bias Volt:</b> 5.5 Volts System: HAST 6000X		231			
	<b>Electrical Test:</b> +85°C System: MAV1_PT	231(0)	0/231	Pass		
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	<b>Electrical Test:</b> +85°C System: MAV1_PT		45(0)	0/45	Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 2.50 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (15.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	