



## Product Change Notification - KSRA-07HVQF409

---

**Date:**

22 Jan 2020

**Product Category:**

8-bit Microcontrollers; Capacitive Touch Sensors

**Affected CPNs:****Notification subject:**

CCB 4031 Initial Notice: Qualification of Microchip Technology Tempe – Fab 2 (TMGR) as an additional fabrication site for selected Atmel products.

**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 Microchip Technology Tempe - Fab 2 (TMGR) as an additional fabrication site for selected Atmel products.

**Pre Change:**

Fabricated at Microchip Technology Colorado - Fab 5 (MCSO) using 6 inch wafer

**Post Change:**

Fabricated at Microchip Technology Colorado - Fab 5 (MCSO) using 6 inch wafer or Microchip Technology Tempe - Fab 2 (TMGR) using 8 inch wafer

**Pre and Post Change Summary:**

	Pre Change	Post Change	
<b>Fabrication Supplier and Location</b>	Microchip Technology Colorado - Fab 5 (MCSO)	Microchip Technology Colorado - Fab 5 (MCSO)	Microchip Technology Tempe - Fab 2 (TMGR)
<b>Wafer Diameter</b>	6 inches	6 inches	8 inches
<b>Die size</b>	No change	No change	No change
<b>Quality Certification</b>	ISO9001/TS16949 or IATF16949	ISO9001/TS16949 or IATF16949	ISO9001/TS16949 or IATF16949

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve manufacturability and on-time delivery performance by qualifying a second fabrication source at Microchip Technology Tempe - Fab 2 (TMGR) fabrication site.

**Change Implementation Status:**

In Progress

**Estimated Qualification Completion Date:**

June 2020

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:**

Workweek	December 2019				-->	June 2020				
	49	50	51	52		23	24	25	26	27
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:**

**December 11, 2019:** Issued initial notification.

**January 08, 2020:** Re-issued initial notification to update the Qualification Plan and Affected CPN list.

**January 22, 2020:** Re-issued initial notification to revise the Affected CPN list based on the updated scope.

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-07HVQF409 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)

ATMEGA1284P-PU  
ATMEGA1284-PU  
ATMEGA1284P-MU  
ATMEGA1284-MU  
ATMEGA1284P-AU  
ATMEGA1284-AU  
ATMEGA1284P-MUR  
ATMEGA1284-MUR  
ATMEGA1284P-AUR  
ATMEGA1284-AUR  
ATTINY88-PU  
ATTINY88-MMU  
ATTINY88-MMH  
ATTINY88-MU  
ATTINY88-AU  
ATTINY88-MMUR  
ATTINY88-MMHR  
ATTINY88-MUR  
AT42QT1110-MUR  
AT42QT2100-MUR  
ATTINY88-MURA1  
ATTINY88-AUR  
AT42QT1110-AUR  
ATMEGA128-16MU  
ATMEGA128A-MU  
ATMEGA128A-AUA2  
ATMEGA128L-8AU  
ATMEGA128A-AU  
ATMEGA128-16AU  
ATMEGA128A-AU-HCM  
ATMEGA128L-8MN  
ATMEGA128A-MN  
ATMEGA128-16MN  
ATMEGA128-16AN  
ATMEGA128A-AN  
ATMEGA128-16MNR  
ATMEGA128L-8MNR  
ATMEGA128A-MNR  
ATMEGA128-16ANR  
ATMEGA128L-8ANR  
ATMEGA128A-ANR  
ATMEGA128A-MUR  
ATMEGA128L-8MUR  
ATMEGA128-16MUR  
ATMEGA128A-AUR  
ATMEGA128L-8AUR

ATMEGA128L-8AURA6  
ATMEGA128-16AURA0  
ATMEGA128-16AUR  
ATMEGA324PA-CU  
ATMEGA324A-CU  
ATMEGA324A-PU  
ATMEGA324PA-PU  
ATMEGA324A-MCH  
ATMEGA324PA-MCH  
ATMEGA324PA-MU  
ATMEGA324A-MU  
ATMEGA324PA-AU  
ATMEGA324A-AU  
ATMEGA324PA-AUA1  
ATMEGA324PA-PN  
ATMEGA324PA-MN  
ATMEGA324PA-AN  
ATMEGA324PA-MNR  
ATMEGA324PA-ANR  
ATMEGA324PA-MCHR  
AT42QT5480-MUR  
AT42QT18C15-MUR  
ATMEGA324PA-MUR  
ATMEGA324A-MUR  
ATMEGA324PA-MURA2  
ATMEGA324PA-AUR  
ATMEGA324A-AUR  
ATMEGA324A-AURA3  
ATTINY43U-SU  
ATTINY43U-MU  
ATTINY43U-SUR  
ATTINY43U-MUR  
ATTINY13A-SF  
ATTINY13A-MMF  
ATTINY13A-SSH  
ATTINY13A-SH  
ATTINY13A-SSU  
ATTINY13A-SU  
ATTINY13A-PU  
ATTINY13A-MMU  
ATTINY13A-MU  
ATTINY13A-SS7  
ATTINY13A-SN  
ATTINY13A-SS7RA3  
ATTINY13A-SS7R  
ATTINY13A-SNR  
ATTINY13A-SSHRA3  
ATTINY13A-SSHR  
ATTINY13A-SHR

ATTINY13A-SSUR  
ATTINY13A-SSURA4  
ATTINY13A-SUR  
ATTINY13A-SURA4  
ATTINY13A-MMURA0  
ATTINY13A-MMUR  
ATTINY13A-MUR  
ATTINY13A-SFR  
ATTINY13A-SFRA5  
ATTINY13A-MMFR  
ATMEGA16A-PU  
ATMEGA16L-8PU  
ATMEGA16L-8MU  
ATMEGA16-16MU  
ATMEGA16A-MU  
ATMEGA16A-AU  
ATMEGA16-16AU  
ATMEGA16-16AUA2  
AT42QT2640-AU  
AT42QT1481-AU  
ATMEGA16L-8AU  
AT42QT1481-AN  
AT42QT1481-ANR  
ATMEGA16A-MUR  
ATMEGA16L-8MUR  
ATMEGA16-16MUR  
ATMEGA16A-AUR  
ATMEGA16L-8AURA1  
ATMEGA16-16AUR  
ATMEGA16L-8AUR  
AT42QT2640-AUR  
AT42QT1481-AUR  
ATMEGA16A-AURA8  
ATMEGA32A-PU  
ATMEGA32A-MU  
ATMEGA32-16MU  
ATMEGA32A-AU  
ATMEGA32-16AU  
ATMEGA32L-8AU  
ATMEGA32A-PN  
ATMEGA32A-MN  
ATMEGA32A-AN  
ATMEGA32A-MNR  
ATMEGA32A-ANR  
ATMEGA32A-MUR  
ATMEGA32L-8MUR  
ATMEGA32-16MUR  
ATMEGA32A-AUR  
ATMEGA32A-AURA5

ATMEGA32A-AUR626  
ATMEGA32L-8AUR  
ATMEGA32-16AUR  
ATMEGA64A-MU  
ATMEGA64-16MU  
ATMEGA64L-8MU  
ATMEGA64A-AU  
ATMEGA64-16AU  
ATMEGA64L-8AU  
ATMEGA64-16AUA0  
ATMEGA64A-MN  
ATMEGA64A-AN  
ATMEGA64A-ANR  
ATMEGA64A-MUR  
ATMEGA64-16MUR  
ATMEGA64L-8MUR  
ATMEGA64A-AUR  
ATMEGA64-16AUR  
ATMEGA64L-8AUR  
ATMEGA64-16AURA0  
ATTINY261A-MF  
ATTINY261A-XU  
ATTINY261A-SU  
ATTINY261A-PU  
ATTINY261A-MU  
ATTINY261A-MN  
ATTINY261A-MNR  
ATTINY261A-XUR  
ATTINY261A-SUR  
ATTINY261A-MUR  
ATTINY261A-MFR  
ATTINY261A-MFRA0  
ATTINY48-PU  
AT42QT20C07-MMU  
ATTINY48-MMU  
ATTINY48-MMH  
ATTINY48-MU  
ATTINY48-AU  
ATTINY48-AU907  
ATTINY48-MMUR  
ATTINY48-MMHR  
ATTINY48-MUR522  
ATTINY48-MUR547  
ATTINY48-MUR  
ATTINY48-AUR  
ATMEGA88A-PU  
ATMEGA88PA-PU  
ATMEGA88PA-MMH  
ATMEGA88A-MMH

ATMEGA88A-MU  
ATMEGA88PA-MU  
ATMEGA88PA-AU  
ATMEGA88A-AU  
ATMEGA88PA-AUA6  
ATMEGA88PA-AUA5  
ATMEGA88PA-PN  
ATMEGA88PA-MMN  
ATMEGA88PA-MN  
ATMEGA88PA-AN  
ATMEGA88PA-MMNR  
ATMEGA88PA-MNR  
ATMEGA88PA-ANR  
ATMEGA88PA-MMUR  
ATMEGA88PA-MMHR  
ATMEGA88A-MMHR  
ATMEGA88A-MUR  
ATMEGA88PA-MUR  
ATMEGA88PA-MURA6  
ATMEGA88PA-MURA06  
ATMEGA88PA-AUR  
ATMEGA88PA-AURA3  
ATMEGA88A-AUR  
ATMEGA168A-PU  
ATMEGA168PA-PU  
ATMEGA168PA-MMH  
ATMEGA168A-MMH  
ATMEGA168PA-MU  
ATMEGA168A-MU  
ATMEGA168PA-MUA1  
ATMEGA168PA-AU  
ATMEGA168A-AU  
ATMEGA168PA-AUA1  
ATMEGA168PA-PN  
ATMEGA168PA-MN  
ATMEGA168PA-AN  
ATMEGA168PA-MNR  
ATMEGA168PA-ANR  
ATMEGA168PA-MMHR  
ATMEGA168A-MMHR  
ATMEGA168PA-MUR  
ATMEGA168A-MUR  
ATMEGA168PA-MURA1  
ATMEGA168PA-MUR431  
ATMEGA168PA-AUR  
ATMEGA168A-AUR  
ATTINY861A-XU  
ATTINY861A-SU  
ATTINY861A-SUA0

ATTINY861A-PU  
ATTINY861A-MU  
ATTINY861A-XUR  
ATTINY861A-SUR  
ATTINY861A-SURA0  
ATTINY861A-MUR  
ATTINY44A-SSF  
ATTINY44A-MF  
ATTINY44A-CCU  
ATTINY44A-PU  
ATTINY44A-SSU  
ATTINY44A-MMH  
ATTINY44A-MU  
ATTINY44A-SSN  
ATTINY44A-SSNR  
ATTINY44A-CCUR  
ATTINY44A-SSUR  
ATTINY44A-SSUR625  
ATTINY44A-SSURB09  
ATTINY44A-SSURA0  
ATTINY44A-SSUR569  
AT42QT1040-MMHR  
ATTINY44A-MMHR  
ATTINY44A-MUR  
ATTINY44A-MUR861  
ATTINY44A-SSFRP01  
ATTINY44A-SSFR  
ATTINY44A-SSFRA1  
ATTINY44A-MFR  
ATTINY44A-MFRA0  
ATMEGA8L-8PU  
ATMEGA8A-PU  
ATMEGA8L-8PU096  
ATMEGA8-16PU  
ATMEGA8A-MU  
ATMEGA8-16MU  
ATMEGA8L-8MU  
ATMEGA8A-AU  
ATMEGA8L-8AUBAX  
ATMEGA8L-8AUA1  
ATMEGA8A-AU744  
ATMEGA8L-8AU  
ATMEGA8-16AU  
ATMEGA8A-AU-HCM  
ATMEGA8A-PN  
ATMEGA8A-MN  
ATMEGA8A-AN  
ATMEGA8A-MNR  
ATMEGA8A-ANR



ATMEGA8L-8MURA5  
ATMEGA8-16MUR  
ATMEGA8L-8MUR  
ATMEGA8A-MURA7  
ATMEGA8A-MUR  
ATMEGA8A-AUR  
ATMEGA8L-8AURA5  
ATMEGA8-16AUR  
ATMEGA8L-8AUR  
ATTINY10-TSHR  
AT42QT1010-TSHR  
AT42QT1011-TSHR  
AT42QT1012-TSHR  
ATTINY5-TSHR844  
ATTINY4-TSHR  
ATTINY4-TSHR485  
ATTINY4-TSHR685  
ATTINY10-TSHR867  
ATTINY5-TSHR  
ATTINY9-TSHR  
ATTINY5-TSHR992  
ATTINY4-TSHRA92  
ATTINY4-TSHRB55  
ATTINY10-MAHR  
AT42QT1011-MAHR  
AT42QT1012-MAHR  
AT42QT1010-MAHR  
ATTINY4-MAHR  
ATTINY5-MAHR  
ATTINY9-MAHR  
ATTINY5-MAHRB50  
ATTINY5-MAHRA0  
ATTINY10-TS8R  
ATTINY10-TS8R526  
ATTINY4-TS8R  
ATTINY5-TS8R  
ATTINY9-TS8R  
ATTINY10-TS8RB67  
ATTINY10-TS8RB68  
ATTINY24A-SSF  
ATTINY24A-MM8  
ATTINY24A-MF  
ATTINY24A-CCU  
ATTINY24A-PU  
ATTINY24A-SSU  
ATTINY24A-SSUB65  
ATTINY24A-MMH  
ATTINY24A-MU  
ATTINY24A-SSN

ATTINY24A-SSNR  
ATTINY24A-CCUR  
ATTINY24A-SSUR  
ATTINY24A-SSUR880  
ATTINY24A-SSURA0  
ATTINY24A-SSURB65  
ATTINY24A-MMHR  
ATTINY24A-MUR  
ATTINY24A-MURA0  
ATTINY24A-SSFR  
ATTINY24A-MM8R  
ATTINY24A-MFR  
ATTINY461A-XU  
ATTINY461A-SU  
ATTINY461A-PU  
ATTINY461A-MU  
ATTINY461A-XUR  
ATTINY461A-SUR  
ATTINY461A-SUR565  
ATTINY461A-MUR  
ATMEGA328P-W-NG  
ATMEGA328P-PU  
ATMEGA328-PU  
ATMEGA328P-MMH  
ATMEGA328-MMH  
ATMEGA328P-MU  
ATMEGA328-MU  
ATMEGA328-AU  
ATMEGA328P-AU  
ATMEGA328P-PN  
ATMEGA328P-MN  
ATMEGA328P-AN  
ATMEGA328P-MNR  
ATMEGA328P-ANR  
ATMEGA328P-MMHR  
ATMEGA328-MMHR  
ATMEGA328P-MUR  
ATMEGA328-MUR  
ATMEGA328-AUR  
ATMEGA328P-AUR  
ATMEGA328P-AURA0  
ATMEGA164A-CU  
ATMEGA164PA-CU  
ATMEGA164A-PU  
ATMEGA164PA-PU  
ATMEGA164A-MCH  
ATMEGA164PA-MCH  
ATMEGA164A-MU  
ATMEGA164PA-MU

ATMEGA164PA-AU  
ATMEGA164A-AU  
ATMEGA164A-AUA2  
ATMEGA164PA-MN  
ATMEGA164PA-AN  
ATMEGA164PA-MNR  
ATMEGA164PA-ANR  
ATMEGA164A-CUR  
ATMEGA164PA-CUR  
ATMEGA164A-MCHR  
ATMEGA164PA-MCHR  
ATMEGA164A-MUR  
ATMEGA164PA-MUR  
ATMEGA164PA-AUR  
ATMEGA164A-AUR  
ATMEGA164A-AURA2  
ATMEGA48A-PU  
ATMEGA48PA-PU  
ATMEGA48PA-MMH  
ATMEGA48A-MMH  
ATMEGA48A-MU  
ATMEGA48PA-MU  
ATMEGA48A-AU  
ATMEGA48PA-AU  
ATMEGA48PA-AUA8  
ATMEGA48PA-PN  
ATMEGA48PA-MMN  
ATMEGA48PA-MN  
ATMEGA48PA-AN  
ATMEGA48PA-MMNR  
ATMEGA48PA-MNR  
ATMEGA48PA-ANR  
ATMEGA48PA-MMHR  
ATMEGA48A-MMHR  
ATMEGA48PA-MMHRA1  
ATMEGA48A-MUR  
ATMEGA48PA-MUR  
ATMEGA48A-AUR  
ATMEGA48PA-AUR  
ATMEGA48PA-AURA9  
ATMEGA48PA-AURB0  
ATTINY2313A-SU  
ATTINY2313A-PU  
ATTINY2313A-MMH  
ATTINY2313A-MU  
ATTINY2313A-SUR  
ATTINY2313A-MMHR  
ATTINY2313A-MUR  
ATTINY4313-SU

ATTINY4313-PU  
ATTINY4313-MMH  
ATTINY4313-MU  
ATTINY4313-SUR  
ATTINY4313-MMHR  
ATTINY4313-MUR  
ATMEGA644A-PU  
ATMEGA644PA-PU  
ATMEGA644PA-MU  
ATMEGA644A-MU  
ATMEGA644A-AU  
ATMEGA644PA-AU  
ATMEGA644PA-MN  
ATMEGA644PA-AN  
ATMEGA644PA-MNR  
ATMEGA644PA-ANR  
ATMEGA644PA-MUR  
ATMEGA644A-MUR  
ATMEGA644A-AUR  
ATMEGA644PA-AUR  
ATTINY20-CCU  
ATTINY20-SSU  
ATTINY20-XU  
ATTINY20-MMH  
AT42QT1050-MMH  
ATTINY20-CCUR  
ATTINY20-SSURB47  
ATTINY20-SSUR  
AT42QT1070-SSUR  
AT42QT1070-SSUR852  
ATTINY20-SSUR704  
ATTINY20-SSUR892  
ATTINY20-SSUR988  
ATTINY20-SSURA01  
ATTINY20-SSURA87  
ATTINY20-XUR  
AT42QT1050-UUR  
ATTINY20-UUR  
AT42QT1070-MMHR  
ATTINY20-MMHR  
AT42QT1050-MMHR  
ATTINY20-MMHRA0  
ATTINY40-XU  
AT42QT2120-XU  
ATTINY40-SU  
AT42QT2120-SU  
AT42QT2120-MMH  
ATTINY40-MMH  
ATTINY40-XUR

AT42QT2120-XUR  
ATTINY40-SUR  
AT42QT2120-SUR  
AT42QT2120-MMHR  
ATTINY40-MMHR  
ATTINY40-MMHRA0  
ATTINY84A-W  
ATTINY84A-SSF  
ATTINY84A-SSFRA1  
ATTINY84A-MF  
ATTINY84A-CCU  
ATTINY84A-PU  
ATTINY84A-SSU  
ATTINY84A-SSU710  
ATTINY84A-MMH  
ATTINY84A-MU  
ATTINY84A-CCUR  
ATTINY84A-SSUR  
ATTINY84A-MMHR  
ATTINY84A-MMHR651  
ATTINY84A-MMHR690  
ATTINY84A-MMHR989  
ATTINY84A-MMHRA02  
ATTINY84A-MMHRB81  
ATTINY84A-MUR  
ATTINY84A-SSFRP01  
ATTINY84A-SSFR  
ATTINY84A-SSFRA0  
ATTINY84A-SSFA1  
ATTINY84A-MFR  
ATTINY1634R-SU  
ATTINY1634-SU  
ATTINY1634-MU  
ATTINY1634R-MU  
ATTINY1634-MU874  
ATTINY1634-MN  
ATTINY1634-MNR  
ATTINY1634R-SUR  
ATTINY1634-SUR  
ATTINY1634-MUR  
ATTINY1634R-MUR  
ATTINY828-MU  
ATTINY828-AU  
ATTINY828R-AU  
ATTINY828-MUR  
ATTINY828-AUR  
ATTINY828R-AUR  
ATTINY841-W  
ATTINY841-SSU

ATTINY841-MMH  
ATTINY841-MU  
ATTINY841-SSUR  
ATTINY841-MMHR  
ATTINY841-MUR  
ATTINY441-SSU  
ATTINY441-MMH  
ATTINY441-MU  
ATTINY441-SSUR  
ATTINY441-MMHR  
ATTINY441-MMHRA0  
ATTINY441-MUR  
ATTINY102-SSF  
ATTINY102F-SSF  
ATTINY104-SSF  
ATTINY102-SSN  
ATTINY102F-SSN  
ATTINY104-SSN  
ATTINY102-SSNR  
ATTINY102F-SSNR  
ATTINY104-SSNR  
ATTINY104F-SSNR  
ATTINY102-M7R  
ATTINY102F-M7R  
ATTINY102-SSFR  
ATTINY102F-SSFR  
ATTINY104-SSFR  
ATTINY104F-SSFR  
ATTINY102-M8R  
ATTINY102F-M8R  
ATMEGA32M1-MU  
ATMEGA16M1-MU  
ATMEGA32M1-AU  
ATMEGA16M1-AU  
ATMEGA32M1-AUR  
ATTINY167-W-NG  
ATTINY167-XU  
ATTINY87-XU  
ATTINY87-SU  
ATTINY167-SU  
ATTINY167-MU  
ATTINY87-MU  
ATTINY167-MMU  
ATTINY167-XUR  
ATTINY87-XUR  
ATTINY87-SUR  
ATTINY167-SUR  
ATTINY87-MUR  
ATTINY167-MUR

ATTINY167-MMUR  
ATTINY167-MMURB20  
ATMEGA16U4-MU  
ATMEGA32U4-MU  
ATMEGA32U4RC-MU  
ATMEGA32U4-AU  
ATMEGA16U4-AU  
ATMEGA32U4RC-AU  
ATMEGA16U4RC-AU  
ATMEGA32U4-MUR  
ATMEGA16U4-MUR  
ATMEGA32U4RC-MUR  
ATMEGA16U4-AUR  
ATMEGA32U4-AUR  
ATMEGA32U4RC-AUR  
AT90PWM81-16SF  
AT90PWM81-16MF  
AT90PWM81EP-16SN  
AT90PWM81-16SN  
AT90PWM81EP-16MN  
AT90PWM81-16MN  
AT90PWM81OS-B16SNR  
AT90PWM81OS-B16MNR  
ATMEGA64M1-MU  
ATMEGA64M1-AU  
ATMEGA16U2-MU  
ATMEGA8U2-MU  
ATMEGA16U2-AU  
ATMEGA8U2-AU  
ATMEGA16U2-MUR  
ATMEGA8U2-MUR  
ATMEGA16U2-AUR  
ATMEGA8U2-AUR  
ATMEGA6450P-AU  
ATMEGA6450A-AU  
ATMEGA6490A-AU  
ATMEGA6490P-AU  
ATMEGA645P-MU  
ATMEGA649A-MU  
ATMEGA645A-MU  
ATMEGA649P-MU  
ATMEGA645P-AU  
ATMEGA649A-AU  
ATMEGA645A-AU  
ATMEGA649P-AU  
ATMEGA6450A-AUR  
ATMEGA6490A-AUR  
ATMEGA6490P-AUR  
ATMEGA6450P-AUR

ATMEGA649A-MUR  
ATMEGA645P-MUR  
ATMEGA645A-MUR  
ATMEGA649P-MUR  
ATMEGA649A-AUR  
ATMEGA645A-AUR  
ATMEGA645P-AUR  
ATMEGA649P-AUR  
ATMEGA3250PA-AU  
ATMEGA3290A-AU  
ATMEGA3250A-AU  
ATMEGA3290PA-AU  
ATMEGA329A-MU  
ATMEGA329PA-MU  
ATMEGA325A-MU  
ATMEGA325PA-MU  
ATMEGA329PA-AU  
ATMEGA325A-AU  
ATMEGA325PA-AU  
ATMEGA329A-AU  
ATMEGA325A-MN  
ATMEGA325A-AN  
ATMEGA325A-MNR  
ATMEGA325A-ANR  
ATMEGA3250PA-AUR  
ATMEGA3290A-AUR  
ATMEGA3250A-AUR  
ATMEGA3290PA-AUR  
ATMEGA329PA-MUR  
ATMEGA325A-MUR  
ATMEGA325PA-MUR  
ATMEGA325PA-AUR  
ATMEGA329A-AUR  
ATMEGA329PA-AUR  
ATMEGA325A-AUR  
ATMEGA169PA-MCH  
ATMEGA165PA-MU  
ATMEGA165A-MU  
ATMEGA169PA-MU  
ATMEGA169A-MU  
ATMEGA165PA-AU  
ATMEGA169PA-AU  
ATMEGA169A-AU  
ATMEGA165A-AU  
ATMEGA165PA-MN  
ATMEGA169PA-MN  
ATMEGA169PA-AN  
ATMEGA169PA-MNR  
ATMEGA165PA-MNR



ATMEGA169PA-ANR  
ATMEGA169PA-MCHR  
ATMEGA165PA-MUR  
ATMEGA165A-MUR  
ATMEGA169A-MUR  
ATMEGA169PA-MUR  
ATMEGA165PA-AUR  
ATMEGA165A-AUR  
ATMEGA169A-AUR  
ATMEGA169PA-AUR  
ATHON169A-AUR  
ATMEGA32U2-MU  
ATMEGA32U2-AU  
ATMEGA32U2-MUR  
ATMEGA32U2-AUR  
AT90PWM161OS-16SF  
AT90PWM161OS-16MF  
AT90PWM161OS-16SN  
AT90PWM161-16SN  
AT90PWM161OS-16MN  
AT90PWM161-16MN  
AT90PWM161-16SNR  
AT90PWM161OS-16SNR  
AT90PWM161OS-16MNR  
AT90PWM161-16MNR  
AT90PWM161OS-16SFR  
AT90PWM161OS-16MFR



# **QUALIFICATION PLAN SUMMARY**

**PCN #: KSRA-07HVQF409**

**Date:  
November 01, 2019**

**Qualification of Microchip Technology Tempe – Fab 2 (TMGR)  
as an additional fabrication site for selected Atmel products.**

**Purpose: Qualification of Microchip Technology Tempe – Fab 2 (TMGR) as an additional fabrication site for selected Atmel products.**

**CCB No: 4031**

**Die Qualification Plan: 3 lots per QCI-39000**

Test / Evaluation	Test Conditions / Parameters
Operating (Dynamic) Life	<ul style="list-style-type: none"> <li>• 150°C for 408 hrs at Vdd max</li> </ul>
High Temp. Retention Bake (DLT) / High Temperature Operating Life (HTOL)	<ul style="list-style-type: none"> <li>• 504 hrs @ 175°C.</li> </ul>
Endurance Cycling	<ul style="list-style-type: none"> <li>• 10,000 flash Erase/Write cycles at 85°C</li> <li>• 100,000 EEPROM Erase/Write cycles at 85°C</li> </ul>
ESD HBM	<ul style="list-style-type: none"> <li>• Tested at 500V, 1000V, and 2000V</li> </ul>
Latch-up	<ul style="list-style-type: none"> <li>• Should meet a minimum of +/- 105mA injection on I/O pins with a clamp of 1.5 x VMax on the positive injection and 0.5 x VMax on the negative injection. Power supply pin shall be stressed at 1.5 x VMax with a 200mA clamp.</li> </ul>
Electrical Validation	<ul style="list-style-type: none"> <li>• 30 units from one wafer lot. Datalog parameters at room, hot and cold at vcc min/max and frequency min/max. Collection of this data may be done as part of any qualification test's pre or post functional testing or from a separate group of parts"</li> </ul>

## Package Qualification Plan

<b>Misc.</b>	Assembly site	MMT
	BD Number	A-064764 / A
	MP Code (MPC)	35473YRXBC01
	Part Number (CPN)	ATMega328P-15MZ
	MSL information	MSL-1/260
	Assembly Shipping Media (T/R, Tube/Tray)	T/R
	Base Quantity Multiple (BQM)	5000
	Reliability Site	MPHIL
	CCB No.	4031
<b>Lead-Frame</b>	Paddle size	150x150 mils
	Material	C194
	DAP Surface Prep	Bare CU
	Treatment	None
	Process	Saw Singulated
	Part Number	10103202
	Lead Plating	Matte Tin
<b>Bond Wire</b>	Material	CuPdAu
<b>Die Attach</b>	Part Number	3280
	Conductive	Yes
<b>MC</b>	Part Number	G700LTD
<b>PKG</b>	PKG Type	VQFN
	Pin/Ball Count	32
	PKG width/size	5x5x0.9mm

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002; Perform 8 hour 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	MTAI	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.
Backward Solderability	J-STD-002 ;Perform 8 hours steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.	22	5	1	27	> 95% lead coverage	5	MTAI	
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	3	15	0 fails after TC	5	MMT/MTAI	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	3	15	0	5	MMT/MTAI	30 bonds from a minimum of 5 devices.
Wire Sweep		5	0	3	15	0		MMT	Required for any reduction in wire bond thickness.
Die Shear	Mil. Std. 883-2011	5	0	3	15	0			
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	MMT	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	MMT/ MTAI	
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 MSL1/MSL3 @ 260°C	231	15	3	738	0	15	MTAI Post test: ASEM	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.
Biased HAST	+130°C/85% RH for 96 hrs. Electrical test pre and post stress at +25°C.	77	5	3	246	0	10	MTAI Post test: ASEM	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Unbiased HAST	+130°C/85% RH for 96 hrs. Electrical test pre and post stress at +25°C.	77	5	3	246	0	10	MTAI Post test: ASEM	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	MTAI Post test: ASEM	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.