Product Change Notification - GBNG-06LXXH156

Date: 20 Mar 2017

Product Category: 8-bit PIC Microcontrollers

Notification subject: CCB 2856 Initial Notice: Qualification of Microchip Fabrication site (FAB 4) for Atmel

ATMEGA168PB device family manufactured with the 59.91K process technology.

Notification text:

PCN Status:

Initial notification

Microchip Parts Affected:

Please open the attachments found in the attachments field below labeled as PCN_#_Affected_CPN.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change:

Qualification of Microchip Fabrication site (FAB 4) for Atmel ATMEGA168PB device family manufactured with the 59.91K process technology.

Pre Change:

Fabricated at UMC5 and TPS5 fabrication sites using 8 inch wafers.

Post Change:

Fabricated at Microchip Fabrication site (FAB 4) using 8 inch wafers.

Pre and Post Change Summary:

| | Pre C | hange | Post Change | | |
|-----------------------|---------------|---------------|---------------|--|--|
| Fab Site | UMC5 | UMC5 TPS5 | | | |
| Wafer Size | 8 inch wafers | 8 inch wafers | 8 inch wafers | | |
| Quality Certification | ISO/TS16949 | ISO/TS16949 | ISO/TS16949 | | |
| Design/Layout | No Change | No Change | No Change | | |
| Die Size | No Change | No Change | No Change | | |

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve on time delivery performance by qualifying Microchip Fabrication site (FAB 4) because of capacity constraints at UMC5 and TPS5.

Change Implementation Status:

In progress

Estimated Qualification Completion Date:

June 30, 2017

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:

| Time Table Summary. | | | | | | | | | | | |
|---------------------------|------------|----|----|----|--|----|-------|----|----|----|--|
| | March 2017 | | | ^ | | Ju | ne 20 | 17 | | | |
| Workweek | 10 | 11 | 12 | 13 | | 22 | 23 | 24 | 25 | 26 | |
| Initial PCN Issue Date | | Х | | | | | | | | | |

| Qualification 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:

March 13, 2017: Issued initial notification.

March 20, 2017: Re-issued the initial notification. Revised the initial PCN by narrowing the scope to affect only the ATMEGA168PB device family manufactured with the 59.91K process technology which is reflected in the subject, description, and the affected parts list.

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-06LXXH156_Affected CPN.pdf

PCN_GBNG-06LXXH156_Qual_Plan.pdf PCN_GBNG-06LXXH156_Affected CPN.xlsx

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

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Affected Catalog Part Numbers (CPN)

| PCN_GBNG-06LXXH156 |
|----------------------|
| Catalog Part Numbers |
| ATMEGA168PB-AN |
| ATMEGA168PB-ANR |
| ATMEGA168PB-AU |
| ATMEGA168PB-AUR |
| ATMEGA168PB-MN |
| ATMEGA168PB-MNR |
| ATMEGA168PB-MU |
| ATMEGA168PB-MUR |



QUALIFICATION PLAN SUMMARY

PCN #: GBNG-06LXXH156

Date February 22, 2017

Qualification of Microchip Fabrication site (FAB 4) for Atmel ATMEGA168PB device family manufactured with the 59.91K process technology.

Process Qualification Reliability Test

| Qualification Test | #Lots (total) | MCHP QCI39000-er QCI39000-002c | SS/Lot (incl. spares) | Total Sample | Bias Vdd(V) | Temp (°C) | Duration (Hrs or Cyc) | Comments |
|---|------------------|--------------------------------------|--------------------------|-----------------|----------------|----------------------|-----------------------------|---------------------------------|
| ELF | 3 | 800 | 825 | 2475 | 5.5 | 150 | 48 | |
| HTOL | 4 | 200 | 210 | 840 | 5.5 | (125) 150 | (1000) 504 | AUTO: Read out at -40/25/105 |
| Endurence (read-out @10Kc / 100Kc) | 3 | 77 | 82 | 246 | 5.5 | 25 85 | 100Kc | |
| Data Retention (Package level with 10K pre-cycling) | 3 | 77 | 82 | 246 | | 25 175 | 504 | |
| Temperature Cycle | 3 | 77 | 82 | 246 | | -65/150 | 504 | |
| Biased HAST | 3 | 77 | 82 | 246 | 5.5 | 130/85% (110/85%) | 96 (264) | |
| Unbiased HAST | 3 | 77 | 82 | 246 | | 130/85% (110/85%) | 96 (264) | |

Product Qualification Reliability Test

| Qualification Test | #Lots (total) | MCHP QCI39000-er QCI39000- 002c | SS/Lot (incl. spares) | Total Sample | Bias Vdd(V) | Temp (°C) | Duration (Hrs or Cyc) | Comments |
|--------------------|------------------|--|-----------------------------|-----------------|----------------|--------------|-----------------------------|------------------------------|
| ESD HBM | 1 | 27 | 30 | 30 | | 25 | | |
| ESD MM | 1 | 12 | 30 | 30 | | 25 | | Still required for AVR parts |
| ESD CDM | 1 | 15 | 30 | 30 | | 25 | | |
| Latch Up - TQFP | 1 | 12 | 30 | 30 | | 125 | | |

Package Qualification Reliability Test

| Qualification Test | #Lots (total) | MCHP QCI39000-er QCI39000- 002c | SS/Lot (incl. spares) | Total Sample | Bias Vdd(V) | Temp (°C) | Duration (Hrs or Cyc) | Comments |
|--------------------|------------------|--|-----------------------------|-----------------|----------------|--------------|-----------------------------|----------|
| Solderability | 1 | 15 | 18 | 18 | | 260 | 168 | |
| Bond Pull | 1 | 15 | 18 | 18 | | 25 | 168 | |
| Ball Bond Shear | 1 | 15 | 18 | 18 | | 25 | 168 | |