

Microsemi Corporation

November 5, 2015

Product/Process Change Notification No: PCN1504

Change Classification: Major

Subject: Transfer of Assembly Support for VQG176, VQG128, and TQG176 from Amkor Taiwan (ATT1) to Amkor Philippines (ATP1), and a Minor Change in the Physical Appearance of VQG128 and VQG176

Description of Change

Devices listed in [Appendix A](#) will have the assembly support transferred from ATT1 to ATP1 facility.

Additionally, the VQG176 and VQG128 packages at the ATP1 facility use the Pin Gate molding process and a mold compound material optimum for that process. The mold gate mark will appear on the top side of the package.

There is no change in the critical dimension of the Package Outline Drawing. There is no change in the device fit and the electrical and thermal performance.

Reason for Change

Microsemi's assembly sub-contract facility, Amkor, will discontinue the lead frame assembly support at ATT1 by the end of 2015 and will consolidate the assembly support at ATP1.

Upon transfer to ATP1, the VQG176 and VQG128 will utilize an improved lead frame format (which will allow for more units in a lead frame strip). The use of the pin gate molding process and an optimum molding material is necessary as part of the lead frame format change. This process has mold entering from the top side and has an identifiable mark (pin gate). Refer to [Figure 1](#) for additional details.

Application Impact

There is no expected impact to customer applications.

For TQG176, ATP1 will use same set of materials as what is being used at ATT1, and will be produced in the same way as ATT1. There is no impact on quality and reliability as ATP1 and ATT1 use identical process control.

For VQG128 and VQG176, the mold gate mark does not affect the critical dimension of the Package Outline Drawing. This also does not impact the device specification as stated in the product data sheets.

Method of Identifying Changed Product

The country from which the units were assembled is marked on the top side of the package. Those assembled at ATT1 shows TWN on the marking while those to be built at ATP1 shows PHL.

For VQG128 and VQG176 packages utilizing the pin gate molding process built at ATP1 can be distinguished by the mold gate mark at the top side of the package. Refer to [Figure 1](#) at the right side below.

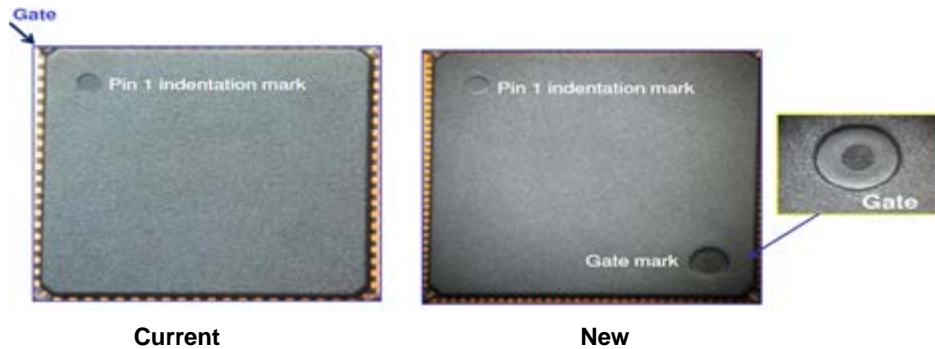


Figure 1 Bottom Corner Gate (left) and Top Corner Pin Gate (right) with Pin Gate Mark

Products Affected by this Change

Refer to [Appendix A](#) for affected products.

Production Shipment Schedule

Microsemi SoC is building buffer inventory to support 6 months of customers' forecasted demand. However, availability is on a first come first serve basis in the event of an upside demand.

For TQG176, the consolidation of facility at ATP1 will involve the physical transfer of some assembly equipments from Taiwan to the Philippines by end of 2015. Additionally, ATP1 will perform their own internal production equipment qualification after the transfer for TQG176.

Microsemi SoC is expected to resume production at ATP1 around **March 2016**.

Microsemi SoC may start shipping parts from ATP1 by **March 2016**. Products made in ATT1 or ATP1 may be shipped after that depending on inventory availability.

Qualification Data

As per the JESD47 guidance, the VQG176 (20 mm x 20 mm) and VQG128 (14 mm x 14 mm) are covered by qualification performed by Microsemi SoC on the TQG144 (20 mm x 20 mm body size) that utilized Pin Gate molding.

There is no change in material set from ATT1 to ATP1 facility for TQG176. No further package qualification run is required by JESD47.

Contact Information

If you have further questions related to this topic, contact Microsemi's Technical Support at soc_tech@microsemi.com.

Regards,

Microsemi Corporation

Any projected dates in this PCN are based on the most current product information at the time this PCN is being issued, but they may change due to unforeseen circumstances. For the latest schedule and any other information, please contact your local Microsemi Sales Office, the factory contact shown above, or your local distributor.

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Appendix A: Device Affected

A42MX09-1TQG176	A54SX08-1TQG176	A54SX16P-1TQG176
A42MX09-1TQG176I	A54SX08-1TQG176I	A54SX16P-1TQG176I
A42MX09-2TQG176	A54SX08-1TQG176M	A54SX16P-1TQG176M
A42MX09-2TQG176I	A54SX08-2TQG176	A54SX16P-2TQG176
A42MX09-3TQG176	A54SX08-2TQG176I	A54SX16P-2TQG176I
A42MX09-3TQG176I	A54SX08-3TQG176	A54SX16P-3TQG176
A42MX09-FTQG176	A54SX08-3TQG176I	A54SX16P-3TQG176I
A42MX09-1TQG176M	A54SX08-TQG176	A54SX16P-TQG176
A42MX09-TQG176	A54SX08-TQG176I	A54SX16P-TQG176I
A42MX09-TQG176A	A54SX08-TQG176M	A54SX16P-TQG176M
A42MX09-TQG176I	A54SX32-1TQG176	A54SX32A-2TQG176
A42MX09-TQG176IX218	A54SX32-1TQG176I	A54SX32A-2TQG176I
A42MX09-TQG176M	A54SX32-1TQG176M	A54SX32A-1TQG176
A42MX09-TQG176X288	A54SX32-2TQG176	A54SX32A-1TQG176I
A42MX16-1TQG176	A54SX32-2TQG176I	A54SX32A-1TQG176M
A42MX16-1TQG176I	A54SX32-3TQG176	A54SX32A-3TQG176
A42MX16-1TQG176IX218	A54SX32-3TQG176I	A54SX32A-3TQG176I
A42MX16-1TQG176M	A54SX32-TQG176	A54SX32A-FTQG176
A42MX16-2TQG176	A54SX32-TQG176I	A54SX32A-TQ176X79
A42MX16-2TQG176I	A54SX32-TQG176M	A54SX32A-TQG176
A42MX16-3TQG176	AGLP030V2-VQG128	A54SX32A-TQG176I
A42MX16-3TQG176I	AGLP030V2-VQG128ES	A54SX32A-TQG176M
A42MX16-FTQG176	AGLP030V2-VQG128I	-
A42MX16-FTQG176X301	AGLP060V2-VQG176	-
A42MX16-FTQG176X345	AGLP060V2-VQG176ES	-
A42MX16-FTQG176X347	AGLP060V2-VQG176I	-
A42MX16-TQG176	AGLP060V5-VQG176	-
A42MX16-TQG176A	AGLP060V5-VQG176ES	-
A42MX16-TQG176I	AGLP060V5-VQG176I	-
A42MX16-TQG176IX218	AGLP060V5-FVQG176	-
A42MX16-TQG176M	-	-
A42MX16-TQG176X288	-	-
A42MX16-TQG176X4	-	-
A42MX16-TQG176X52	-	-
A42MX24-1TQG176	-	-
A42MX24-1TQG176I	-	-
A42MX24-1TQG176M	-	-

A42MX24-2TQG176	-	-
A42MX24-2TQG176I	-	-
A42MX24-3TQG176	-	-
A42MX24-3TQG176I	-	-
A42MX24-FTQG176	-	-
A42MX24-TQG176	-	-
A42MX24-TQG176A	-	-
A42MX24-TQG176EXP	-	-
A42MX24-TQG176I	-	-
A42MX24-TQG176M	-	-