

# Microsemi Corporation

December 19, 2015

## Product/Process Change Notification No: PCN1506A

### Change Classification: Major

**Subject: Addendum to PCN 1506** - Transition from Corner Gate Mold (CGM) to Pin Gate Mold (PGM) process for A3PE3000 and AGLE3000 devices in FG896/FGG896 packages at Amkor Korea (ATK4)

### Description of Change

Devices listed in [Appendix](#) are currently assembled with the CGM process at the ATK4 facility. They will be converted to the PGM process at the ATK4 facility. The package mold cap will be changed slightly and the lead-free solder ball will use SAC305 instead of SAC405.

### Reason for Change

The ATK4 facility will discontinue the support of BGA packaging using the CGM process and will only focus on supporting BGA packaging using the center PGM process.

The devices listed in [Appendix](#) have relatively long wires, and PGM process has optimum performance in preventing yield loss due to wire sweep. Also, the BGA package with PGM mold is singulated using a dicing approach instead of the traditional punch type, which results in a smoother substrate edge finish.

Microsemi SoC intends to continue to use ATK4 for the assembly of devices shown in [Appendix](#) using PGM. Additionally, there are Microsemi SoC devices in FGG896 package with the SAC305 lead-free solder balls that are fully qualified and run with the PGM process in production mode. Microsemi SoC intends to standardize the usage of SAC305 for BGA devices running the PGM process at ATK4.

### Application Impact

The slight increase in the mold compound coverage will not affect the fit and function as defined in the product datasheets. It does not impact the thermal and electrical performance of the device. The total package thickness and X and Y dimensions of the substrates remain the same. Refer to [Figure 1](#) for the description of body size.

### Method of Identifying Changed Product

The current packages have relatively large metallized area (mold gate) on the pin in one corner. The packages processed with PGM have a dimple at the center of the package. Refer to [Figure 1](#).



**Figure 1 Comparison of FGG896 Packages with CGM (Left) and PGM (Right) Mold**

## Products Affected by this Change

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

## Production Shipment Schedule

Microsemi SoC may start shipping components with PGM process by **March 31, 2016**. Products made with the CGM or/and PGM process may be shipped after **March 31, 2016** depending on the availability of inventory.

## Qualification Data

Qualification data derived from a similar device is currently available. Additional data collection using the A3PE3000 die is expected to be available on or before **February 28, 2016**.

## Contact Information

If you have further questions related to this topic, contact Microsemi's Technical Support at [soc\\_tech@microsemi.com](mailto: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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## Summary of Changes for Addendum A:

1. Removed devices, APA1000 and APA750, in FG896/FGG896 in the products affected for PGM conversion. It has been decided to keep them in CGM, and move the product support to ATP3. Refer to [PCN1505 Addendum A](#) for more details.

The substrates of above two devices have plating bus line which needs to be re-routed, if converted to PGM. This may affect the electrical response of the package. To prevent any change on the substrates, the above devices will be continued with current molding process.

2. Added AGLE3000-FG896/FGG896 for devices covered by conversion to PGM mold.

## Appendix: Affected ProASIC3E Devices

A3PE3000-1FG896	M1A3PE3000-1FG896	M7A3PE3000-1FG896
A3PE3000-1FG896I	M1A3PE3000-1FG896I	M7A3PE3000-1FG896I
A3PE3000-2FG896	M1A3PE3000-2FG896	M7A3PE3000-1FGG896
A3PE3000-2FG896I	M1A3PE3000-2FG896I	M7A3PE3000-1FGG896I
A3PE3000-FG896	M1A3PE3000-FG896	M7A3PE3000-2FG896
A3PE3000-FG896I	M1A3PE3000-FG896I	M7A3PE3000-2FG896I
A3PE3000-1FGG896	M1A3PE3000-1FGG896	M7A3PE3000-2FGG896
A3PE3000-1FGG896I	M1A3PE3000-1FGG896I	M7A3PE3000-2FGG896I
A3PE3000-2FGG896	M1A3PE3000-2FGG896	M7A3PE3000-FG896
A3PE3000-2FGG896I	M1A3PE3000-2FGG896I	M7A3PE3000-FG896I
A3PE3000-FGG896	M1A3PE3000-FGG896	M7A3PE3000-FGG896
A3PE3000-FGG896I	M1A3PE3000-FGG896I	M7A3PE3000-FGG896I
A3PE3000L-1FG896	M1A3PE3000L-1FG896	
A3PE3000L-1FG896I	M1A3PE3000L-1FG896I	
A3PE3000L-1FG896M	M1A3PE3000L-1FG896M	
A3PE3000L-FG896	M1A3PE3000L-FG896	
A3PE3000L-FG896I	M1A3PE3000L-FG896I	
A3PE3000L-FG896M	M1A3PE3000L-FG896M	
A3PE3000L-1FGG896	M1A3PE3000L-1FGG896	
A3PE3000L-1FGG896I	M1A3PE3000L-1FGG896I	
A3PE3000L-1FGG896M	M1A3PE3000L-1FGG896M	
A3PE3000L-FGG896	M1A3PE3000L-FGG896	
A3PE3000L-FGG896I	M1A3PE3000L-FGG896I	
A3PE3000L-FGG896M	M1A3PE3000L-FGG896M	

AGLE3000V2-FG896	M1AGLE3000V2-FG896	
AGLE3000V2-FG896I	M1AGLE3000V2-FG896I	
AGLE3000V2-FGG896	M1AGLE3000V2-FGG896	
AGLE3000V2-FGG896I	M1AGLE3000V2-FGG896I	
AGLE3000V5-FG896	M1AGLE3000V5-FG896	
AGLE3000V5-FG896I	M1AGLE3000V5-FG896I	
AGLE3000V5-FGG896	M1AGLE3000V5-FGG896	
AGLE3000V5-FGG896I	M1AGLE3000V5-FGG896I	



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