

Product Document



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Unterpremstaetten, February 4, 2015

PCN 01-2014; MAJOR -- Punch (Singulation) MLF Assembly Site Transfer

(Please note that this PCN refers to APCN01-2014; dated on April 30th, 2014)

Dear Sirs,

Amkor Technology, our assembly partner, announced closure of its Amkor Technology Korea Site 1 (ATK1) in Seoul, South Korea by the end of 2015. This closure will affect all the leadframe based products that includes all ams AG's devices running in punch MLF (MicroLeadFrame) format wherein your products, listed in details on the succeeding page, are being assembled.

With the ATK1 Site Closure, Amkor's recommendation and direction, upon customer approval, is to qualify and transfer the affected devices / packages to an alternate Amkor Sites in the Philippines and / or in China. Both sites have prepared and optimized production floor space for an increased capacity to accommodate the devices / packages affected by the site closure. This strategy is expected to lessen the transfer risk as Amkor committed not to change the Bill of Materials, including the materials' suppliers, equipment models and types, and the Product and Process Controls. This also includes installing of onsite technical supports from Amkor Korea during the qualification until the mass ramp-up stages.

ams AG selected Amkor Technology Philippines Site 1 (ATP1) to be the alternate source for pMLF.



Amkor Technology Philippines Site 1 (ATP1) is a qualified and a long-time packaging subcontractor of ams AG wherein several ams packages are running in high production volumes for both automotive and non-automotive products. Such packages are SOIC, SSOP, TSSOP, PLCC and MQFP. Note: Amkor Technology China is not a qualified manufacturing site for ams AG.

This change will therefore ensure product availability. Thus, making ams AG in a better position to meet the long-term customer demands.

Assembly Sites Details

From: **Amkor Technology Korea, Inc. Site 1 (ATK1)**

151, Dongil-ro, SeongDong-gu, Seoul 133-706, Korea

To: **Amkor Technology Philippines Site 1 (ATP1)**

Km. 22 East Service Road, South Superhighway, Muntinlupa City,
Philippines 1702

Advantages of Selecting ATP1 over Other Assembly Houses

- a) The Package Outline Dimensions and BOM of each product will be maintained.
- b) Assembly Process Flow, Direct Materials and Suppliers, Equipment Models and Types, Product and Process Controls, Special and Critical ams AG's requirements will all be a copy exact from ATK1. This includes the Quality Systems, MES Systems, etc. Thus, ensuring the same level of quality and reliability on products that will be receive from the new site.
- c) ATK1 Technical Support / Team will be dispatched / available to ATP1 from Qualification Phase to Mass Ramp-up Phase.



- d) Closer to ams Asia Inc, ams' Test Center in the Philippines. Therefore, this change is also expected to improve the delivery performance, responsiveness and on-time delivery, without the compromise of Quality.
- e) With on-site ams engineering and logistical support.

— A detailed program / timeline of the transfer, from ATP1 product qualification to ATK1 ramp down and closure is in-place between ams AG and Amkor Technology to ensure that all critical items will be captured during the qualification and the transfer phase prior to mass production release.

Purpose of Change

- a) To reasonably protect the availability and supply of customers' products.

Affected Products

- All pMLF products currently produced at ATK1
- (Please refer to part list listed page 6)

PPAP Change / Impact on Product

- a. PPAP change required.
- b. No change in Process Flow.
- c. No change in Bill of Materials.
- d. No change in the leadframe's internal and external dimensions.
- e. No change in the Package Outline Dimensions (POD).
- f. No change in production equipment.
- g. No impact on the product as there will be no change in terms of form, fit, function, and reliability of the devices.



ams Assembly Documents

Assembly C-Specs will be generated for the new assembly site location. It will be a copy exact from the old C-Specs except for the assembly site location and the Plant Code in the Assembly Lot Code (YYWW?ZZ) that will be laser marked on the unit's top package. Please refer to product traceability portion for the details.

Data Sheets

There will be no change in the Data Sheets.

Qualification

ams will be running a full package qualification. Please refer to below qualification strategy and schedule.

Q3 2014, Target Qualification Start.

Q2 2015, Target Qualification Finish.

Process Validation and Safelaunch

Process validation and safelaunch lots will be implemented and be completed.



Product Traceability

ams AG will be maintaining the existing Assembly Lot Code Format (Date Code + Plant Code + Trace Code).

Assembly Plant Code will be changed from V (assigned to ATK1) to M (assigned to ATP1) for the traceability.

This will be the only noticeable change in the Unit's Top Mark.

Target Date of Implementation:

Q4 2015

Upon customer approval, during the production ramp-up stage of ATP1 and the ramp-down of ATK1, the customer can expect to receive products from the two assembly sites.

Please be advised that unless we received your written refusal concerning this PCN in writing within 30 days, the PCN shall be deemed accepted.

If you do have further questions, please do not hesitate to contact me.

Best Regards,

Herwig Klimesch

ams AG

VP of Quality



<u>affected parts</u>
AS5215B
AS5215D
AS5215F
AS5215O
AS5245A
AS5245
AS5261
AS5262
AS5263
AS5263M
AS8223
AS8506
AS8506C
AS8515