

June 14, 2021

Richardson RFPD, Inc.
1950 S. Batavia Ave, Suite 100
Geneva, Illinois 60134

ATTN: Quality/Purchasing Manager

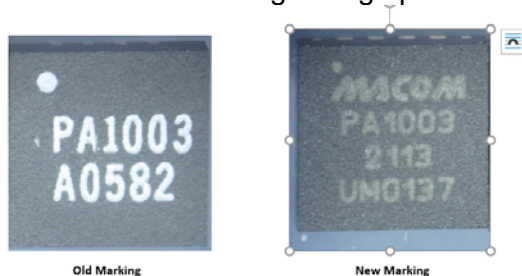
Subject: NPA1003QA Changes

PCN #: PCN-01446

Dear Valued Customer,

MACOM Technology Solutions has a goal of providing redundant manufacturing capability for increased surge capacity as well as an uninterrupted supply chain. MACOM also periodically reviews its manufacturing supply chain with a goal towards continually improving its cycle time and manufacturability. Towards those ends, we would like to inform you of the following changes:

- 1) MACOM will immediately change its manufacturing package assembly site from Azimuth Industrial Co. Inc., Union City, Ca. to Unisem Ipoh, Malaysia.
- 2) MACOM has also qualified the epitaxial material used to manufacture this product from existing material stock grown at (formerly, then purchased by MACOM in 2014) Nitronex LLC to IQE. This was completed to make certain that, as the original epitaxial material depletes, MACOM can continue to provide the NPA1003QA product across our customer base; as a result, there is a minor decrease in the nominal gate threshold voltage from an original typical value of $\sim 1.5V$ to $\sim 2.0V$. All other RF and DC parameters remain similar and within the datasheet specification.
- 3) As a result of the transfer of assembly to Unisem, the following changes are also being completed and inclusive to this PCN notification:
 - a. Change of die attach epoxy from Diemat 6030HK-SD to Namics H9890-6A (the former material is being discontinued by the manufacturer);
 - b. Mold compound change from Sumitomo G770HCD to Sumitomo EME-6770HJ. This change was recommended by Sumitomo due to the latter's superior flow properties and lower chance of wire sweep during cure;
 - c. Addition of Unisem as a lead frame supplier for piece part PT-0010640;
 - d. Utilization of Au bond wire routinely used by Unisem (1 mil diameter, piece part number PT-0010640).
 - e. Part marking change per below:



For new marking, line 2 = part designation, line 3 = assembly date code, line 4 = country of origin code and unique traceability code.

The above changes will be implemented on assembly builds beginning in June 2021. MACOM has completed qualification testing and, other than the minimal voltage change referenced above (still datasheet compliant), electrical performance incorporating these changes, compared to previous material (using Nitronex epitaxial material and assembled at Azimuth) was equivalent.

Thank you in advance for your review of this PCN. If you have questions regarding this subject, please contact me.

Sincerely,

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