



DEFENSE LOGISTICS AGENCY
 LAND AND MARITIME
 POST OFFICE BOX 3990
 COLUMBUS, OH 43218-3990

November 29, 2011

Mr. Terry Lichte
 TTM Technologies, Inc.
 2630 South Harbor Blvd.
 Santa Ana, CA 92704

Dear Mr. Lichte:

RE: Notification of Add-on Qualification; MIL-PRF-31032; FSC 5998; CAGE Code 1WQ42;
 VQ(VQE-12-023569) / 034865

Qualification of products is granted as a result of successful qualification testing to Military Performance Specification MIL-PRF-31032, Printed Circuit Board/Printed Wiring Board, and associated specification sheets MIL-PRF-31032/1 and /2. The capability that has been added is conductive hole fill for GF base material product. The updated qualified capability listing for GF base material below shall be listed on Qualified Manufacturers List QML-31032. The effective date of this qualification is November 28, 2011.

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| <p>MANUFACTURER</p> <p>TTM Technologies, Inc. 2630 South Harbor Blvd. Santa Ana, CA 92704</p> | <p>PLANT LOCATIONS</p> <p>Same Address as Manufacturer</p> | <p>CAGE CODE: 1WQ42</p> <p>PHONE #: 714-241-0303 FAX #: 714-241-0707 EMAIL: tlichte@ttmtech.com</p> |
| <p>Specification: MIL-PRF-31032/1, MIL-PRF-31032/2 Qualification Letters: VQE-05-8644, VQE-06-011211, VQE-12-023569 Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant Max. Panel Size: 18" x 24" Max. Number of Layers: 24 Max. Board Thickness: .20" Min. Hole Size: .013" Drilled Plated-Through Hole Before Plating Aspect Ratio: 14:1 Through-Hole, 1:1 Microvia Min. Conductor Width/Space: .003 "/.003" Hole Preparation: Permanganate Desmear, Plasma Etchback Hole Wall Conductive Coating: Electroless Copper Copper Plating: Direct Current Plate Hole Fill / Via Plug: Conductive, Non-Conductive Solder Resist: Dry Film, Liquid Photoimageable Finish System: ENIG, HASL, Hot Oil Reflow of Plated Sn/Pb, ImmAg, OSP Additional Fab Capabilities: Blind Vias, Buried Vias, Sequential Lamination</p> | | |

This qualification has been assigned test report number 31032-3405-12. This qualification is based on your MIL-PRF-31032 certification and is subject to the conditions stated below:

1. A listing on the Qualified Manufacturers List (QML) does not guarantee acceptance of the product(s) in any future purchase.
2. QML listing does not constitute a waiver of any requirements of the specification or of the provisions of any contract.
3. Advertising of qualification information is permitted. Permission to use such information for advertising or publicity purposes is granted provided that such publicity or advertising does not state or imply that the product(s) is the only product of that type qualified or that the Department of Defense in any way recommends or endorses the manufacturer's product.
4. The listing applies only to products produced in the plant(s) specified in this letter and applies to future amendments or revisions of the specification, unless otherwise notified.
5. The listing applies only to materials and manufacturing construction techniques identical to or covered by that (those) qualified. The qualifying activity must be advised in advance of any change to the materials and manufacturing construction techniques. Failure to notify the qualifying activity of any change to the materials and manufacturing construction techniques is cause for removal from the QML.

Manufacturers are required to inform this office immediately if a failure occurs during Periodic Conformance Inspection (PCI) or Capability Verification Inspection (CVI) testing, if production of this qualification is discontinued, or prior to issuance of a GIDEP Alert and/or Problem Advisory on their QML products.

Because we are held responsible for the accuracy and currency of this QML, please let us know if your company discontinues production utilizing these materials or processes. If you have any questions, please contact Mr. Jonathan Stone, (614) 692-3022.

Sincerely,

/SIGNED/

JOSEPH GEMPERLINE
Chief
Sourcing and Qualification Division