



2801 Commerce St. SE, Blacksburg, VA 24060

June 19, 2006

Pure Tin Finishes, Lead, RoHS, and WEEE Materials

MIL-PRF-38534 (General Performance Specification for Hybrid Microcircuits), Appendix E, Section E.4.2.7, prohibits the use pure tin finish (less than 3% alloy material) on internal elements and as a final finish and undercoat on the external surfaces of MIL-PRF-38534 QML qualified hybrid microcircuits. Most readily available and qualified solderable non-pure tin finishes use percentages of lead in the mixture as the alloy material. The majority of space, military, and high-reliability users of VPT products support the position of using lead bearing solderable finishes because of the risk of tin whisker formation caused by pure tin coatings, as outlined in numerous papers published by NASA, Aerospace Corporation, Boeing, University Researchers, and other experts. This position is, however, in direct conflict with the initiatives set forth by Japan and the European Union directives; Article 95 of the EC Treaty - RoHS (Restriction of Hazardous Substances), and Article 175 of the EC Treaty - WEEE (Waste Electrical and Electronic Equipment). These initiatives restrict the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB's), and polybrominated diphenyl ethers (PBDE's). VPT is issuing this letter to inform our customers about VPT's position on and the use of pure-tin and the restricted materials set forth in the EU directives.

VPT **does not** use components, materials, or finishes which contain mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB's), or polybrominated diphenyl ethers (PBDE's) in or on any of our products.

VPT **does** use solders and solderable finishes on components internally to our products which contain small percentages of lead. VPT **does not** use lead bearing solders and solderable finishes externally on our products **except** for the seal surfaces of solder sealed package products which are utilized in a small minority of our products (see product datasheets for details) or if the customer specifically requests solder dipped leads.

VPT **does not** use pure tin finishes internally or externally on our MIL-PRF-38534 qualified Class H or Class K hybrid microcircuit products and certifies these products to be pure tin free. VPT verifies this by 100% component and material lot sample testing for components and materials that use solderable or silver colored finishes.

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A very small percentage of 100% pure tin finished components and materials **may** be present internally in VPT's other, non-MIL-PRF-38534 QML compliant, screening level hybrid microcircuit products, specifically the Standard, /ES, and /HB screened products except where restricted by customer contract. VPT is currently in the process of also converting these product levels to being internally pure tin free. Most VPT hybrid microcircuit products **do not** utilize external pure tin finishes, **except** for a few non-MIL-PRF-38534 QML compliant, Standard and /ES screened products, which utilize solder seal packaging which are utilized in a small minority of our products (see product datasheets for details). This packaging utilizes 100% fused tin finishes on the package surfaces and pins. Standard and /ES screened products which use this packaging are identified very clearly on VPT's product datasheets at www.vpt-inc.com.

VPT **does** use components and materials which contain 100% pure tin finishes and lead bearing solders and solderable finishes internally in our potted module, non-hybrid microcircuit products.

Sincerely,

Shawn D. Graham, Executive Director of Quality – VPT, Inc.

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