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Webinar Course Description

Hybrid Microwave Design for Manufacturability (DFM) (2 Sessions)

Hybrids, microwave modules and Class III medical implants along with other complex microelectronic assemblies all require a lot of thinking and design trade offs prior to full scale manufacturing. There have been many instances where designers have unknowingly placed tremendous burdens on manufacturing that translate into yield loss, production delays, reliability problems and unhappy customers. This two day webinar is intended to sensitize designers to the issues important to manufacturing. Hybrid circuit designers must “design with the process in mind”. Any circuit that can’t be assembled within reasonable cost and schedule constraints is a bust. Each session touches and summarizes important lessons learned based on actual experience.

Session I: DFM Part I

- Rationale and significance of DFM
- Typical problems encountered during hybrid manufacturing and how they can be prevented!
- Package Design Issues
 - Deep access vs. conventional bonding
- Wire and Ribbon Bonding
 - Guidelines for wire and ribbon selection
 - Design rules for die and wirebond layout and placement
- Problems with Duroid and other soft board substrates and how to avoid

Session II: DFM Part II

- Assembly Issues due to Poor Design
- How to avoid Au embrittlement
- Plating requirements and common mistakes
- Issues with Hermetic seals and outgassing
 - Seam weld and laser weld
- Die, substrate and package compatibility
 - Coefficient of Thermal Expansion (CTE)
- Thermal impedance and importance of minimizing junction temperature
- Soldering Processes
 - Vacuum solder vs. scrub assisted eutectic processes
- Design for rework and maximum process yields



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Instructor Biography:

Mr. Thomas Green is an independent consultant and the Technical Director at TJ Green Associates LLC, a Veteran owned small business. He has over twenty-eight years of experience in the microelectronics industry and has worked at Lockheed Martin Astro Space and USAF Rome Laboratories. At Lockheed he was a Staff engineer responsible for the materials and manufacturing processes used in building custom high reliability space qualified Hybrid microcircuits for military and commercial applications. Tom has demonstrated expertise in sub fab, die bond wirebond, seam sealing and leak testing processes. For a complete CV and Client listing visit www.tjgreenllc.com