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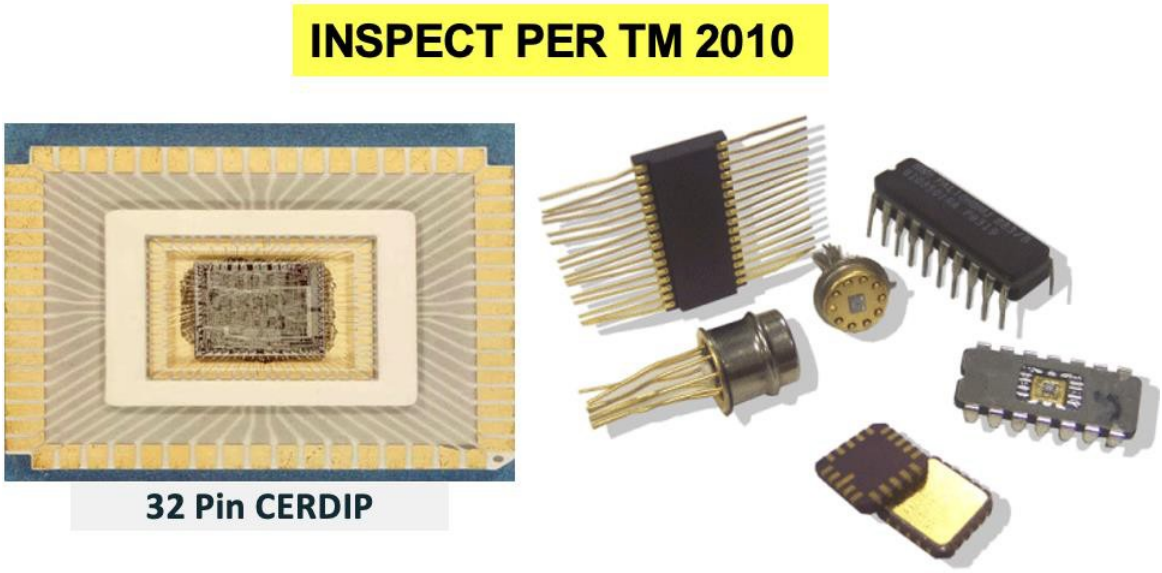
Virtual Training Course Outline

MIL-STD-883 TM 2010 Visual Inspection

(3 Session, 2 hrs each)

Instructor: Thomas J. Green, TJ Green Associates, LLC



TM 2010 contains the full inspection criteria for Class S, B, Q, V, Y, etc. for monolithic microcircuits. TM 2010 Microcircuit visual inspection is a flow down requirement from Mil-Prf-38535. This class is focused exclusively on the visual criteria contained in TM 2010 which differs somewhat from TM 2017, especially regarding the low mag visual criteria. We will also review the high mag inspection requirements for ICs and MMICs for all product quality classifications. This class includes a test, and everyone receives a training certificate.

Course Outline

- **Mil-Prf-38535 Integrated Circuit (Microcircuits) General Spec flow down**
- **Low Mag Criteria (30-60X)**
  - Die Attach (eutectic and non-eutectic criteria)
  - Wirebond General (gold ball, wedge, and tailless)
  - Rebonding of monolithic devices.
  - Flip chip solder bump die (para 3.2.1.6)

    - Foreign material (para. 3.2.5)
    - Foreign Material Die Coated devices (para 3.2.5.1)
- **High Mag Criteria**
    - Para 3.1.1-3.4 High Mag IC and MMIC Inspection
    - Para. 3.1.6. Film resistors
    - Para 3.1.7 Laser trimmed thin film resistors
    - Flip Chip Defects Scribe and Edge Cracks
- **Class Review with Q&A**
- **Certification Test**

INSTRUCTOR BIO

Thomas J. Green has more than 43 years combined experience in industry/academia and the DoD. He earned a B.S from Lehigh University in Materials Engineering and an MEA from Univ of Utah. He is a recognized expert in materials and processes used to assemble hybrids, RF microwave modules, Class III medical implants, optoelectronics, and other types of hermetic/non-hermetic packaged microcircuits and sensors. He has considerable expertise in hermetic testing methods per TM 1014 and moisture related failures in general. He is a consultant to companies developing next gen microelectronics for military and space. Serving as a Research Scientist at the U.S. Air Force Rome Air Development Center, Tom worked as a reliability engineer analyzing component failures and in industry, he was the process engineer at Lockheed Denver. He has invaluable experience in wirebond, die attach, hermetic sealing, FA and root cause identification and is an expert in the visual inspection criteria for hybrids and microcircuits Mil-Std-883 TM 2010 and TM 2017. For the last 20 years, Tom's expertise has helped position TJ Green Associates, LLC as a recognized industry leader in teaching and consulting services for high-reliability military, space, and medical device applications. Tom is a Fellow of IMAPS (International Microelectronics and Packaging Society) and retired LtCol USAFR with 28 years of service.