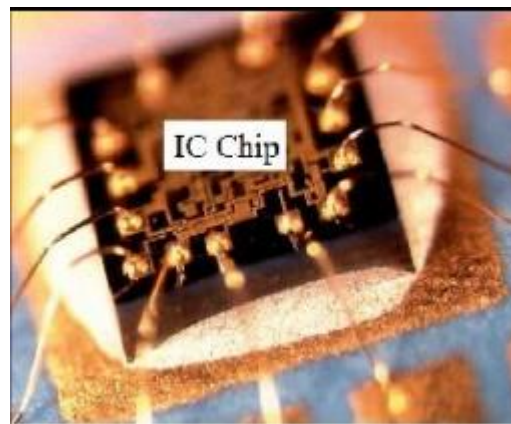


Pre Cap Visual Inspection per Mil-Std-883 (TM 2017)

1 DAY

Hybrids/MCMs/RF Microwave Modules all require a visual inspection step just prior to encapsulation or hermetic seal. This is a critical process step that requires a high degree of operator skill and understanding of what to look for and reject as part of the inspection process. This course defines the inspection criteria based on traditional Mil Spec requirements in conjunction with industry accepted best commercial practices. Over 200 color photographs of actual production defects are reviewed and discussed in detail. The students are exposed to a variety of defects and how the defects relate to the materials and process flow. Inspection checklists are used to simplify the criteria and focus on the major problem areas. Students learn what to look for as part of Pre Cap visual inspection and how to interpret and apply the very latest MIL-STD-883 criteria.



The course is intended for quality assurance personnel, inspectors, lead operators and others responsible for inspection of the hardware prior to the final package sealing process.

Course Outline

Hybrid Materials and Processing Overview
Review of terminology

General Inspection Guidelines and Procedures
Visual inspection requirements flow down
MIL-PRF-38534 MIL-STD-883 TM 2017 TM 2010 TM 2032

Pre Cap Visual Inspection Criteria

High mag die inspect of active devices
Defects related to wafer fab, saw and break, probe test etc.



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Thick film/thin film substrate defects e.g., cracks, chipouts
Laser Trim defects
Passive component inspection per TM 2032
Epoxy die attach, fillet criteria for active and passive elements
Eutectic solder attach
Epoxy attach of chip capacitors and chip resistors
Wirebond defects, e.g., excessive squash out, heel cracks, misplaced bonds, etc.
ball bonds, wedge bonds, ribbon bonds and heavy wedge aluminum

Foreign Material Identification and Contamination Control
External Visual Inspection Criteria (Optional)

Course Summary
Student Examination Test and Review
Student Feedback and Course Critique