

LEADER'S GUIDE v.1

Surface Mount Solder Joint Workmanship Standards **(DVD-SMT-D)**

The DVD-SMT-D training program has been developed to teach industry acceptance requirements for the most common types of surface mount solder joints.

The contents of this training program are based on the IPC Training and Reference Guide for Surface Mount Solder Joint Evaluation - DRM-SMT. This guide contains the critical acceptance criteria for chip component, J-lead and Gull Wing solder joints - from the IPC-A-610D. A complimentary copy of DRM-SMT is included along with this DVD. It may be helpful to have students reference the DRM-SMT criteria during the DVD training program. All of the acceptance criteria is also available in the IPC-A-610D - should you prefer that your students refer directly to the industry specification.

The DVD is divided into four sections accessible through the Main Menu: *Introduction, Dimensional Criteria for Class 2 Products, Dimensional Criteria for Class 3 Products and Defect Criteria for both Class 2 and Class 3 Products.* This menu allows you to choose between Class 2 or Class 3 training. *Note: The introductory material is common to both classes - as is the Defect Criteria section. This training program can be used to train students for either class 2 or 3 – or both classes.* The 'skip' button on the DVD remote control allows you to advance through each of the dimensional criteria – should you wish to move quickly to a specific section.

The DVD also includes optional English subtitles for the hearing-impaired and the English-as-a-Second-Language (ESL) audience. Subtitles are accessible by pressing the "subtitle button" on your DVD remote at any time.

All of the supplementary training and testing materials for this program are available for download over the Internet at: <http://training.ipc.org/dvd/smtd>
The URL for these download materials is also printed on the face label of the DVD. A copy of the DVD transcript is also included for translation and other purposes.

Testing and Certificates

The downloadable support materials include written *tests* for class 2 and 3 products and printable certificates for students scoring 70% or better on the test.

After you complete all of the training for either class of product, you may give the students the written test for that specific class. The 30-question test can be an

open or closed book exam – depending on your preference. For an open book exam, students may refer to IPC-A-610D, or the DRM-SMT-D to verify the correct answer to each question. The “open book” test demonstrates that students know how to find and properly apply the acceptance criteria. The “closed book” test demonstrates that students have memorized the information presented in the DVD training program.

Both tests include color graphics and photographs that can be printed either in color or black and white (the color copy may make defect identification slightly easier). You may print as many copies of the test as necessary. Directions regarding how to take the exam, mark answers, change answers, etc. are provided on the *Answer Page* of the test. Please review these directions with your students.

An *Answer Key* is also provided for grading the *tests*. After you grade the tests, you may wish to return them to each student so they can review any incorrect answers.

An *IPC Training Certificate* is also included on the DVD-SMT-D *Download Page*. This PDF document allows you to type in the names of students that pass the test -- and print out individual color certificates. *Training Certificates* can be provided to students who obtain a passing grade of 70% **(21 correct answers)** or better on the test. Students that do not pass may retake the test at the trainer’s discretion to obtain a passing grade.

As an operator-level credential, this certificate demonstrates mastery of the theory and knowledge contained in this DVD course, as evidence of competency for ISO training requirements -- through an industry-developed training program. Passing this test does *not* qualify instructors or students to teach or interpret the entire IPC-A-610D specification, or assure proficiency in the physical skills required to create products to the requirements of any IPC specifications.

CEUs

In order to assign *continuing education units* to each student... measure the total training time in reviewing DVD-SMT-D, group discussion and testing. Each one-hour increment of training translates into 0.1 CEU. Therefore, if you spend 2 hours in classroom training and evaluation, each student would earn 0.2 CEU. You may need to provide written documentation for student CEU records.

We hope this DVD training program provides an efficient and effective method to insure that your operators and inspectors make the right acceptance decisions. Thank you for purchasing this IPC training program.

Joel Kimmel
DVD-SMT-D Producer