SURFACE MOUNT & CIRCUIT BOARD ASSOCIATION

Designers Council

IPC Designer Certification

Following is the outline of the Designer Certification Program and the Preparation Workshop and Examination offered by the IPC and conducted by the SMCBA.

Next Workshop and Exam:
Melbourne - May 11 and 12, 2011
Registration details are on page 3 - for enquiries please call 03 9568 0599

Why Certify? In the business climate where work projects grow in complexity and responsibilities are constantly shifting, certification stands as a clear testimony to your qualifications, your knowledge and your skills.

More than any other professionals in the electronics industry, PCB designers deserve the benefits and recognition of certification. Industry trends, such as outsourcing and concurrent engineering, are elevating the importance of the designer in the manufacture of many of today's electronic products. IPC Designer Certification is a powerful tool in establishing your credentials and in promoting the paramount importance of your work to everyone involved in the production of printed circuit boards and assemblies.

Leon Fonstin, Integrated CAD Technologies was in 1999 approved by the IPC Designers Council as an instructor for the preparation workshop and a certification examiner. This has enabled the SMCBA to offer the program for designers in this region.

Preparing for Certification: Good designers are part artists and part fortune tellers - their unique creations must be able to navigate through a long and complicated process. The program assesses a designers' knowledge of how to transform a schematic into a reliable rigid PCB design, which can be easily manufactured, assembled and tested. In developing the certificaiton program, the IPC Designers Council recognises that the most effective designers must have a solid foundation in PCB fabrication and assembly. The exam is based on several critical IPC documents that link design principles to the end product use of the printed circuit assembly.

Objectives:

1. Layout
2. Electrical Considerations
3. Materials
4. Component Requirements
5. Assembly Requirements
6. Board Fabrication
7. Physical Board Characteristics
8. Documentation
9. Inspection and Test
10. Reliability

About the Examination Process The two hour examination is in a multiple choice format. Answer choices are all plausible, therefore, you must indicate the most correct answer. Occasionally, you must indicate the two most correct answers or identify certain characteristics from a diagram. The examination is graded and a review of the test items conducted on-site. The exam is conducted after the workshop and if you are not prepared to take the exam at that time you may keep the exam voucher and take the test at a later date. Workshop fees and examination fees must be paid before you are able to sit the exam.

The PCB Designer Certification is recommended for designers with at least some experience designing PCBs who have a good understanding of electronics and manufacturing issues.

SAMPLE QUESTIONS – SEE NEXT PAGE

Designers Council

PCB Certification (C.I.D.)

Sample Questions

1. If analog circuits are restricted to the center of a vertically mounted board, what is the effect of placing a power supply in the connector zone, below the analog circuits?

A. the analog circuit performs better
B. the heat from the power supply causes instability
C. the power supply, influenced by the analog circuit, is erratic
D. the analog circuit requires additional protection to overcome spikes

2. Which two factors are the primary influence for the layer assignment in a multi-layer printed board structure?

A. the bonding material used
B. the requirements of solder mask
C. the direction of conductor routing
D. the relationship of core to prepreg
E. the balanced distribution of copper
F. the characteristics of the surface layer

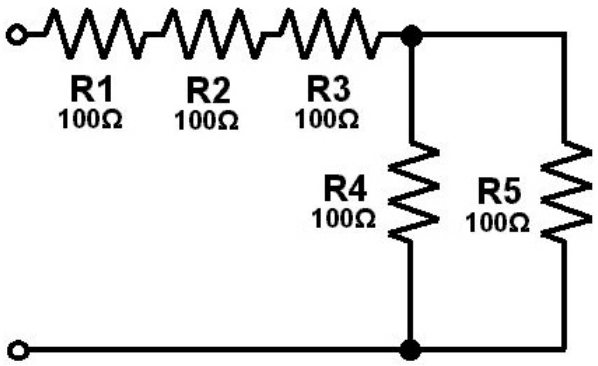
3. What are the three most common dielectric thicknesses of copper-clad laminate used to produce double-sided printed boards?

A. .50mm [0.020”]
B. .75mm [0.030”]
C. 1.00mm [0.040”]
D. 1.50mm [0.060”]
E. 2.00mm [0.080”]
F. 2.40mm [0.090”]

4. What is the basic difference in part mounting techniques of SMT vs. through-hole components?

A. SMT lands are smaller in area
B. through-holes require plating
C. SMT devices require no holes
D. solder joints are formed differently

5. What is the total resistance of this circuit?



A. 50 ohms
B. 233 ohms
C. 350 ohms
D. 500 ohms

6. Which three factors are the primary influence for the layer assignment in a multilayer printed board structure?

A. the drilling datum
B. the tertiary datum
C. the primary datum
D. the zero-zero datum
E. the secondary datum
F. the component datum

7. What is the most probable cause of a through-hole multilayer board assembly repeatedly containing defective joints on the power and ground connections?

A. the solder dwell is too short
B. component leads are too large
C. the board orientation is incorrect
D. respective through-holes are not thermally relieved

8. What is the main consideration in the standard fabrication allowance?

A. process variation
B. hole tolerance capability
C. aspect ratio characteristics
D. minimum annular ring requirements

REGISTRATION FORM:
IPC Designer Certification Program

Fax Registrations to the SMCBA:

Fax No: 03 9568 0622

Int'l: 61 3 9568 0622

All enquiries to Andrew Pollock on Phone 03 9568 0599.

Name: _____

Position: _____

Company: _____

Address: _____

_____ Postcode: _____

Phone: _____ Fax: _____

Email: _____

Please accept my registration for the workshop to be conducted as follows:

___ May 11 and 12, 2011

Venue: SMCBA, 87A Chadstone Road, Malvern East, Victoria 3145
(Location and Parking details will be sent to all attendees)

Fee: SMCBA Members - $750 plus GST Non members - $900 plus GST
Fee includes workshop, study guide and exam fees, lunches and refreshments on each day.

Study Materials: Please see separate sheet.

Fax your registration to (03) 9568 0622 then return with your payment to the SMCBA, PO Box 3140, Murrumbeena VIC 3163

Payable by cheque made payable to the SMCBA and sent to the address above.

TAX INVOICE – THIS FORM IS YOUR TAX INVOICE UPON RECEIPT OF PAYMENT SMCBA ABN: 61 228 055 453

EFT: Banking details for funds transfer:

Bank:	National Australia Bank
Address:	383 Centre Road, Bentleigh VIC 3164
BSB Number:	083-004
Account Name:	The Surface Mount & Circuit Board Ass Inc
Account Number:	50635-3532

CREDIT CARD PAYMENT BY VISA, MASTERCARD, BANKCARD OR AMEX:

☐ VISA ☐ MASTERCARD ☐ BANKCARD ☐ American Express

Card Number:

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Expiration Date: _____/____

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Signature: _____ Date: _____

STUDY MATERIALS CHECK FORM:
IPC Designer Certification Program

Name: _____

Position: _____

Company: _____

Fax to the SMCBA:

Fax No: 03 9568 0622

Int'l: 61 3 9568 0622

All enquiries to Andrew Pollock on Phone 03 9568 0599.

The IPC Designer Certification (CID) workshop requires that you to bring the following materials to the workshop.

Please:

1. Check off any of the following materials you may already have.
   Please Note: A paper version of the study guide **is included** in the workshop/exam fee
2. Indicate which you would like to borrow from the SMCBA library (there is no cost to do this but credit card details are required as security, this will only be processed if the goods are not returned at the conclusion of the workshop or have been damaged).
3. Indicate any of the following you may wish to purchase at the prices listed
4. Return with your registration form

Items needed for the workshop:

Study Guide – will be sent to you upon receipt of workshop registration and fees.

	Price exc GST	I Have This	Borrow*	Purchase
IPC-2221A	$60			
IPC-2222	$40			
IPC-T-50	$80			
Items recommended for studying:				
Study Guide on CD ROM	$175			

* If borrowing from the SMCBA we require a credit card as a security deposit. No charge will be made to this unless the items borrowed are either not returned or returned in a damaged condition.

Card Number:

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Expiration Date: _____/____ Card Holder's Name: _____