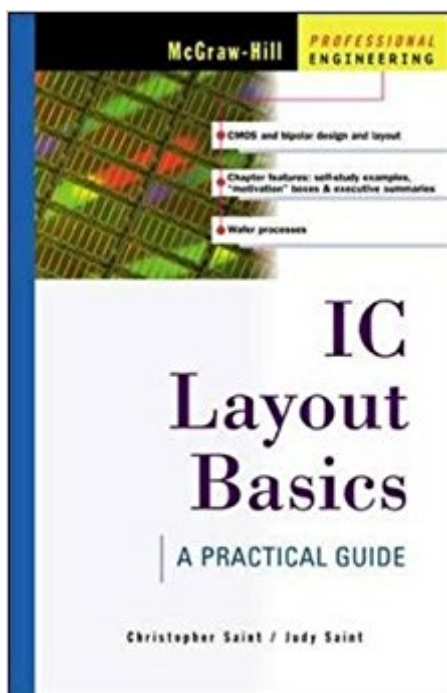


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# IC Layout Basics : A Practical Guide



## Synopsis

MASTER IC LAYOUT WITHOUT AN ENGINEERING BACKGROUND! To new chip applications such as cell phones, personal digital assistants, and consumer electronics, electronic semiconductor usage has exploded, creating an unprecedented demand for technicians skilled in CMOS and bipolar design and layout. In IC LAYOUT BASICS, you get the same top-notch material utilized in IBM's successful training courses. This essential primer brings you up to speed on:

- \* Integrated circuit processes
- \* Layout techniques
- \* Fundamental device concepts
- \* Wafer processes

Writing for technicians without an engineering degree, the authors present concepts from the ground up, building on the simple until the complex becomes crystal clear. Examples, self-tests, and sidebars reinforce the material and make it all quick and painless. For maximum retention, each chapter includes preview points, "motivation" boxes, and executive summaries.

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## Customer Reviews

MASTER IC LAYOUT WITHOUT AN ENGINEERING BACKGROUND! A "plain-English" guide to learning the basics of the integrated circuit design process--co-authored by one of IBM's top instructors! Electronic semiconductor usage has exploded thanks to new chip applications such as cell phones, personal digital assistants, and consumer electronics--and created an unprecedented demand for technicians skilled in CMOS and bipolar design and layout. In IC LAYOUT BASICS,

coauthor Chris Saint incorporates the same top-notch material utilized in his highly successful IBM training courses and offers you an essential primer covering: \* Integrated circuit processes\* Layout techniques\* Fundamental device concepts\* Wafer processes

Writing for technicians without an engineering degree and with the surety and clarity of an experienced teacher, Chris and Judy Saint offer a logical layered approach to learning. They present concepts from the ground up, building on the simple until the complex becomes crystal clear. Examples, self-tests, and sidebars reinforce the material and make it all quick and painless. For maximum retention, each chapter includes preview points, "motivation" boxes, and executive summaries. **PROVEN TEACHING METHODS AND MATERIALS, A JARGON-FREE STYLE, AND IN-DEPTH, NO-FLUFF COVERAGE MAKE THIS THE BEST GUIDE TO LEARNING IC DESIGN AND LAYOUT BASICS**

CHRISTOPHER SAINT is currently Manager of the IBM West Coast Physical Design Group. He served as lead layout engineer for the Commquest GSM, AMPS, and CDMA chipsets, as well as spending many years with the Analog Devices, LSI Logic, and GEC/Plessey semiconductor layout design groups. JUDY SAINT is a professional writer and illustrator, with 11 years of successful teaching experience. She provided and directed the motivational aspects of this book, keeping the information easy to read and understand.

Great book!

Highly recommended especially for any one who has no previous knowledge of IC's.. This book goes to explain the fundamentals of the workings of semiconductors. This knowledge helps one to understand the layout and subsequent manufacture of an IC chip.

Great coverage of basic layout concepts. This book explains things in clear, easy to digest terms. The authors also put a sprinkling of humour here and there. Very well written.

Unless you know nothing about layout, this book is too basic for you. If you know nothing about layout, then it is probably ok.

This is the kind of book people need! "IC Layout Basics" really is intended for people with no background in electronics or engineering whatsoever. The first chapter is actually a quick run-through of basic electronics concepts like Ohm's Law and just what exactly a "semiconductor"

is. Combined with its companion book "IC Mask Design" by the same authors, this is the absolute most gentle introduction to semiconductor design that could possibly be conceived. Make no mistake: To actually get a job in the industry, you'll need more than this. As other reviewers have pointed out, the information here is so extremely elementary that professional layout engineers will need to follow-up with further study. But the end of this book helpfully supplies a bibliography of books to follow up with, and even includes a (woefully short and geographically limited) list of college programs on the subject. It's only the basics, but there is no other major book that I know of which explains the basics of semiconductor design so clearly and concisely. As such, it gets thumbs up from me, and a big thanks to the authors for this much-needed contribution to the field!

'IC Layout Basics' is a great book for beginners. There is no doubt about this. I give it 4 star but not 5, why? Because I think there are rooms for improvement (hoping I can see these improvements in the next edition). Below are my comments (good and bad):(1) You don't need to know much about electronics before you can start reading this book, fine! On the other hand, you will know quite something after reading this book, perfect!(2) This book uses plain English plus lots and lots of graphics. This is great for people like me (I live in Hong Kong, a Chinese).(3) This book is well edited. You can hardly find errors in this book even in this first edition. OK, you can find some (e.g. the units on p.172, the graph on p.209).(4) This book is a bit longwinded in some area. I can condense the book by 25% without missing any information. For example, there is no need to use 29 pages (from p.72 to p.100) just to show the steps in a typical CMOS process (two diagrams can be squished into one page).(5) There are topics that can be explained with more insight. For example, why we build transistors on P- EPI but not directly from P Substrate? Epitaxy layer has been described/used through out the book, just missing a bit of explanation.As a whole, this book is a great self-study guide and is the gateway to another master piece: 'IC Mask Design' from the same authors.

very comfortable and very fine . This one is one of the best you will never regret from purchasing it. I advised not to be using by non professional because it may cut your finger a present , very fast, receive it next day. suit for this price .

I've been a layout designer for about 15 years, and really wish I had these books when I first began. Not only would it have saved me time in not hunting down the answers from numerous books, and people, but I would've have had a much more solid grasp more quickly, and would've been a better

layout designer. Though these books are introductory, if you are not a circuit engineer, and are new, don't expect to understand everything contained therein. This is not a "dummies" book -- the writer does expect some exposure to the ideas/terminology contained in the book though he covers them in good detail. Basic knowledge in electronics will be greatly helpful. This is one of the best books I've seen out there for someone who is not an EE, or technical genius but wants to understand layout design on a deeper level. This book, will give you the many "whys", and will deepen your value as a designer. This book and it's companion "IC Mask Design", along with Dan Clein's book are investments that you only wish you made sooner. If you've been designing for some time and do not have a EE degree, I still believe you will glean some additional insights/depth from this book as well.

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