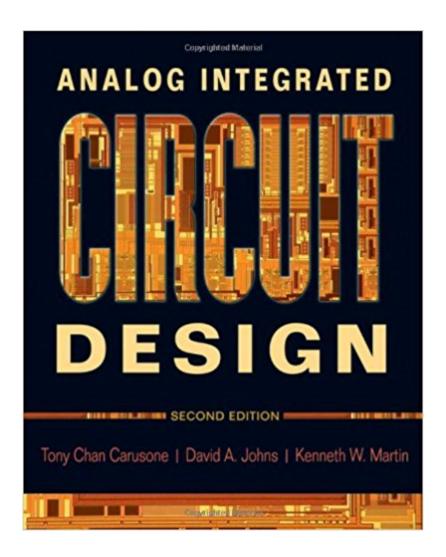


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# **Analog Integrated Circuit Design**





## **Synopsis**

The 2nd Edition of Analog Integrated Circuit Design focuses on more coverage about several types of circuits that have increased in importance in the past decade. Furthermore, the text is enhanced with material on CMOS IC device modeling, updated processing layout and expanded coverage to reflect technical innovations. CMOS devices and circuits have more influence in this edition as well as a reduced amount of text on BiCMOS and bipolar information. New chapters include topics on frequency response of analog ICs and basic theory of feedback amplifiers.  $\tilde{A}$ 

### **Book Information**

Hardcover: 816 pages

Publisher: Wiley; 2 edition (December 13, 2011)

Language: English

ISBN-10: 0470770104

ISBN-13: 978-0470770108

Product Dimensions: 7.7 x 1.3 x 9.2 inches

Shipping Weight: 2.8 pounds (View shipping rates and policies)

Average Customer Review: 4.2 out of 5 stars 35 customer reviews

Best Sellers Rank: #306,330 in Books (See Top 100 in Books) #38 inà Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Integrated #84 inà Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Design #78322 inà Â Books > Textbooks

## Customer Reviews

I design analog/mixed signal circuits for a living. My colleagues and I have referred to the first edition of this book for 15 years now. We were all a bunch of excited nerds to learn a 2nd edition was coming out, and we weren't disappointed. New material, re-organized, as well as same helpful material that was in the first edition. I've seen negative reviews of the first edition and want to address them. This book is not meant to analyze things to death, and probably shouldn't be a student's only book on analog circuit design (perhaps accompanied by Gray Meyer Hurst and Lewis). But if you are a practicing engineer who wants access to the useful calculations and approximations for day-to-day design work, this is a great book. The authors know how to do world-class design for a living and give you efficient access to the practical knowledge you need to do the same. Really happy to see feedback and frequency response addressed as their own chapters, too!

As a practicing analog chip designer, I own several of the better known texts on analog integrated circuit design, but this one outshines them all. Written in a clear and readable style, this text carefully lays the foundation that every circuit designer needs to excel in this field. I made a thorough study of the initial chapters of this book when I was just getting started in IC design, and I continue to return to it regularly to refresh or broaden my circuit design knowledge. The book strikes just the right balance between practical and theoretical instruction, and it does not bury the reader in pages of unneeded mathematical derivations as some texts do. If I could put only one text on my shelf, this would be the one I would choose. I wholeheartedly recommend it to students as well as working professionals who are seeking to succeed in analog integrated circuit design.

I noted that the reviewers who reviewed this book highly indicated they already knew the subject and worked in the field. This review is for students who do not already know the subject well.1) This should not really be listed as a "2nd Edition" - many schools automatically upgrade to 2nd edition books without reviewing them, and this book is unfortunately not as good as the 1st edition. Although it does contain a lot of the 1st edition in it, it also removes some of the helpful equations, while leaving in end-of-chapter questions requiring those equations.2) The chapters are very long, and full of equations, but do not have many explanations and don't seem to give enough information to answer the questions at the end of the chapter. For example, Chapter 1 is approximately 70 pages long with 186 equations in it, yet does not contain all the equations you need to know to do the end-of-chapter homework.3) The book has a lot of errors - there is an error page on the author's website, but it doesn't begin to cover all the errors. Supposedly errors were corrected two years before I bought my new book at full price, but it still had the errors. For example, there is a table in chapter 1 and in the back of the book - the same table, but some of the values are randomly different!4) This book keeps assuming you already know what it is supposedly teaching. I am not sure what the audience for this book would be. It says it is for graduate students, or upper-level undergraduates. However, if you know the subject well enough to follow what he is doing, you don't need the book. If you don't know it, you won't learn it from this. Things are very poorly explained, or it is often just assumed that you know some of the very things the chapter is supposed to teach you. Perhaps it is meant as a review book for someone who already learned all the subjects, and just needs some practice? This book is not for people who do not already have a thorough grasp of transistor modeling, transfer functions, Q-factor, etc. You can literally find better explanations anywhere.5) The homework questions, for which there are no answers, sometimes require

information (on the subject theoretically being learned) not mentioned in the chapter. In cases where an example was given in the chapter, the example will be the simplest version possible with all values given, but the homework problem will be a complex version that requires additional knowledge (not covered in chapter), without many values. In order to do each homework question, I had to spend hours looking through supplementary books. For example, on the subject of bode plots, a first-order, real-pole, transfer function (already in the proper form) is used in the example. There is no mention of complex poles. In the homework, for the second question, you are given a transfer function in expanded form, that has complex poles. If you do not already understand that zeta will give you a little bump etc., you will not be able to do the problem. If you do already know that, then you wouldn't learn anything from the book by its treatment of this subject. The best thing I can say about this book is that it covers the right things in the right order, and contains a significant amount of equations. Unfortunately, it is very, very poorly written, and needs a thorough editing. If you are a teacher, you may wish to compare this book to the first edition, or to the many other options available. If you get stuck with this book as an undergraduate student, and you do not already have a pretty good background on this subject, get a supplement, or a few supplements.

Learned lots.

Great book for Analog Circuit designs. It is not the most friendly for beginners, but more geared for engineers who already have introductory level knowledge of the material.

It does have some repetitive topics throughout the chapters and could be a bit more concise at times. However, the examples in the book were instrumental to the success I had in my graduate course

although the book has some typos, it correct them on its website and offers some good examples of the use of spice. but maybe the Gray and Meyer is a better choice

Quality was as described.

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