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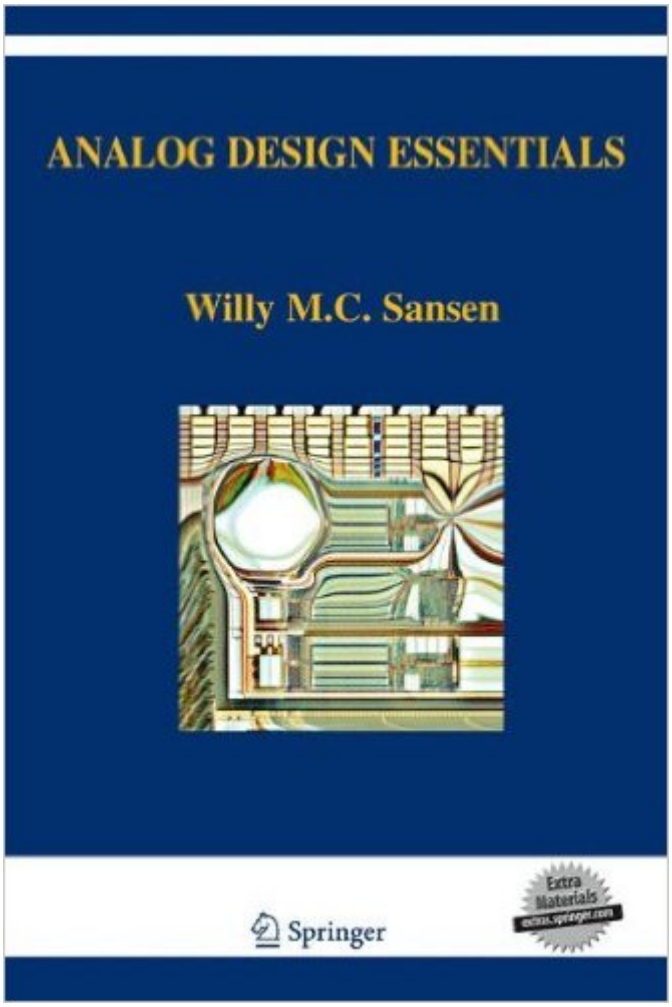
Analog Design Essentials (The Springer International Series In Engineering And Computer Science)



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Synopsis

This unique book contains all topics of importance to the analog designer which are essential to obtain sufficient insights to do a thorough job. The book starts with elementary stages in building up operational amplifiers. The synthesis of opamps is covered in great detail. Many examples are included, operating at low supply voltages. Chapters on noise, distortion, filters, ADC/DACs and oscillators follow. These are all based on the extensive amount of teaching that the author has carried out world-wide.

Book Information

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Customer Reviews

There is a haphazard and unfinished feel to this book. This book has some good design information, but it can jump from the elementary to the advanced in the same chapter. It does not follow the conventional textbook style, but simulates a Powerpoint presentation, with two slides per page. I think there is an over-reliance on the slides. For example, about one hundred of the slides contain nothing but portions of the overall table of contents. Even books for further reading are listed in slides.The main problem, however, is that EVERY slide is fuzzy, as though it had been printed with an old inkjet printer. The resolution of EVERY illustration is so low (near fax quality), that I cannot read some of the circuit diagram labels (see, for example, picture no. 2142 on page 658).I also have a problem with the accompanying CD. It contains 24 pdf files, with a total size of 15 gigabytes (note,

not 15 megabytes but 15 gigabytes) in an ordinary CD! Each file is larger than 600 megabytes, and there are 24 such files! Of course, this is not physically possible with an ordinary CD (only 700 megabytes total), nor even with a DVD. It means that the CD's file directory must have been manipulated so that it has a non-standard format which somehow tricks the computer into believing that the CD has 15 gigabytes. As I have discovered, you can open the pdf files with Acrobat Reader, but you cannot copy them to your hard disk (the file copy will fail). Therefore you must leave the CD in the drive all the time. In any case, these pdf files offer nothing extra, because they contain precisely the same low-resolution pictures that you find in the physical book, nothing more and nothing less, and also at the same low resolution (fax quality).

This book comes with three-color powerpoint slides as illustrations, two per page. Tha may seem a turn-off, but the slides summarize the text very clearly, like bold font inserts in newspaper articles highlight the article's content. I'd say the book is at a fourth year or graduate level, and would be easiest to follow if you had taken a previous Electrical Engineering electronics course.Some aspects of circuits are dwelt upon in detail, for example, selection of pole positions and their relation to peaking in the gain. Some discussions are a bit mystifying to me: for example, much attention is given to the square-law model of the MOS transistor, which after 29 pages is admitted to be inaccurate and that more and more we find "elaborate models have to be used, which are only available from foundries" (p. 29). It would be nice to read how this change affects the design process.Despite wishes for more discussion in some places and less in others, I'd say this book is fun to read, very clear, and an amazing bargain at the price.

The author's renowned status in analog IC-related publications helped me make the purchasing decision. I was very excited by the table of contents because the topics were exactly what I was looking for.Specific appraisals:1) The book is laid out in a stream-of-consciousness style, which is peculiar and very different from most engineering literatures.2) The book is filled with excellent hands-on tips and right-to-the-point technical explanations by the author.3) Although a few equations are given without explaining what the corresponding variables represent, the resultant impact on comprehensibility of the topics is minimum thanks to appropriate illustrations.4) In a few slides, answers are given contradictory to the formulae shown.5) Since the book is apparently built of numerous teaching handouts that were presented at different times/locations/occasions, the notations are not entirely consistent throughout.6) Descriptions are not 100% thorough in some areas, and yet may be favorable to seasoned designers who like exploring on their own rather than

accepting/copying everything from famous experts.7) The CD could have been better documented.8) Arguably not the author’s best work in the field of analog IC design thus far.9) Not exactly suitable for beginners.It would be great if the book had gone deeper into the discussion of switched-capacitor and current-mode circuits. But if it had, the title would have been something like "Advanced Analog Design" rather than the presented "Analog Design Essentials".

The name Analog Design Essentials is wrong for this book!. It is a collection of slides (most probably from a course the author teaches)with short paragraphs which explain the slides. The selection of topics is very good but random equations are thrown in without any explanation whatsoever. You will have to revert to another book to try to understand some of the things the author is talking about.If you are an undergraduate student, DO NOT buy this book thinking it deals with the basics! Practising analog design engineers might find this book interesting. I bought this book because I have high respect for the author. I’ve read many papers authored by him and a previous analog design book where he was the co-author which, in my opinion is one of the best books on analog design (sadly not in print anymore!).

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