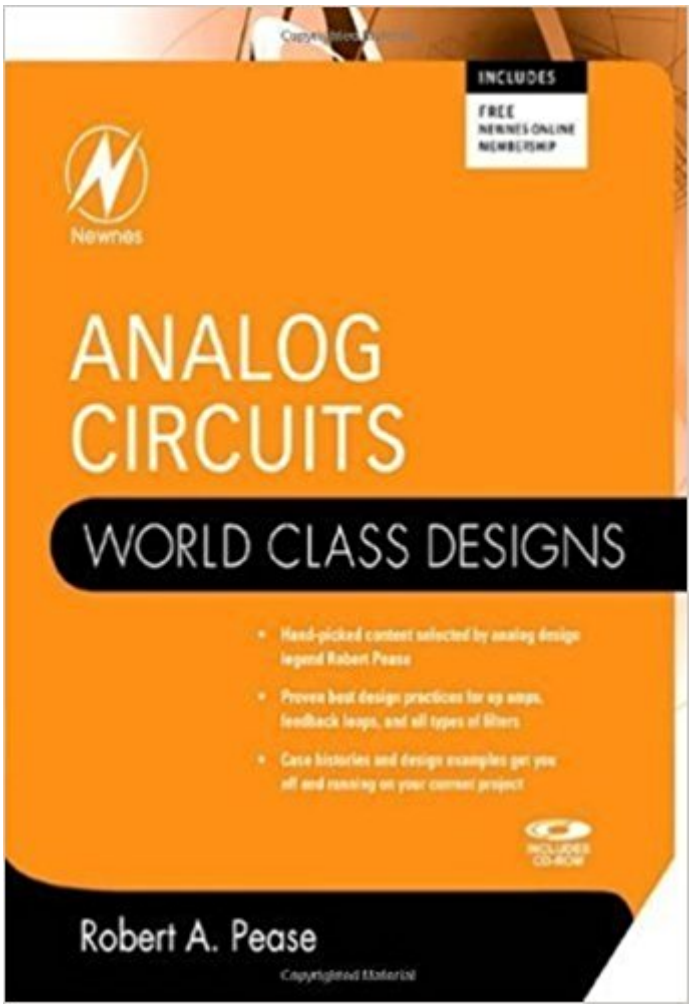
Analog Circuits (World Class Designs)



Synopsis

Newnes has worked with Robert Pease, a leader in the field of analog design to select the very best design-specific material that we have to offer. The Newnes portfolio has always been know for its practical no nonsense approach and our design content is in keeping with that tradition. This material has been chosen based on its timeliness and timelessness. Designers will find inspiration between these covers highlighting basic design concepts that can be adapted to today's hottest technology as well as design material specific to what is happening in the field today. As an added bonus the editor of this reference tells you why this is important material to have on hand at all times. A library must for any design engineers in these fields.*Hand-picked content selected by analog design legend Robert Pease*Proven best design practices for op amps, feedback loops, and all types of filters*Case histories and design examples get you off and running on your current project

Book Information

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Customer Reviews

Robert Pease is certainly one of the legends in analog circuit design.His contempt for SPICE simulation is quite well known in the community.But I have to disagree...I had to brush up on my filter design knowledge and I had a surprise:The section on BPF and notch filters contains errors... many. And they arenot simply type setting errors. For instance in one of the filters a value is labeledas 100pF, while it should be 100nF (P140). Then in another example he got theresonance frequency of the filter very wrong (P264). Resistor references are wrong labeled (P264)If he would have used SPICE he would have discovered that there is a sloppymistake somewhere. The prototype would not worked either, but this would take a lot longerto solder up the circuitObviously /rap knows how to calculate filters, but he is so confident that he makescasual mistakes.But this all does not matter, because as soon as you make an effort to understandthe subject matter, the errors become obvious.Someone should have proof-read the book before publishing however.Otherwise it is one of the best books on electronics I ever bought. It is not trivial and the titleis misleading. "World class designs" ... anybody who thinks this is just a collection of circuits youcan rip off... not so. This is a book which teaches the finer aspects of analog circuit design.Not really for beginners however, and there is some math you need to understand.He shares some knowledge in electronics, you will never learn in school.Also he talks about a general approach to any design (if not life in general).Do not dismiss it lightly

This book is a great collection by Bob Pease, most chapters (or articles) are good, some are stellar and only a few are subpar. Some chapters are very very simple, for instance chapter 4 "Finding the perfect opamp" could be described as "chapter 0 of any standard opamp text book", im not saying the information there is not useful, its just a first day at school in 101 opamp theory.What makes this book different from say a standard opamp text book are the tips and tricks, rules of thumb and case studies offered by the authors. The case study of chapter 9 and the Zoo circuit at the end are both particularly great, chapter 9 in my opinion is probably the best one, it is the closest to having an analog engineer sitting next to you and explaining his methodology and his circuits, in this chapter the author gives a lot of great tips, and a minimum math rule of thumb and intuitive approach to circuit design, he concludes his chapter by analyzing a complete circuit, not just an idealized part, he will through the entire circuit which is not small at all, opamp through opamp, component through component, and explain why everything is there, and why did he choose such values, he will then calculate such values using his rules of thumb and therefore avoiding heavy math derivations. Also in that chapter it is described a very useful practical approach to stabilize some feedback loops

without going deep into feedback theory.A similar chapter is chapter 3 in which the author explains his methodollogy to designing circuits by laying out simple function blocks and progressively adding limitations, but not the entire circuit is analyzed.Chapter 5 on noise is great, with examples of noise calculations and an applied example using instrumentation amplifiers a load cell and ADCs.A considerable chunk of the book is devoted to Analog filters (4 chapters in total, low pass, hi pass, bandpass, band-reject), the filter theory is a bit messy in my opinion, and the author references a lot of graphs, facts and tables which are not provided in the book, instead of providing such material, the author refers to another book in which such graphs, tables and facts can be located. That to me is very messy, having to buy, rent, download, or borrow another book to see what the author is talking about is not really my cup of tea, he will say stuff like "By looking at the graph in the reference book mentioned at the beginning of the chapter, it is apparent that the filter must be a 5th order...".Also considering that the vast amount of filters covered in this book are available in many standard opamp books such as the one by Sergio Franco or Valkenburg's book, it makes all of these chapters in my opinion feel like a bit of a filler in this book, which in my humble point of view should focus more on unconventional circuits or stuff not available everywhere else. Still, the author offers normalized tables and circuits to easily calculate your filters, and that is quite useful. Also I liked that the author covers a small portion of passive LCR filters, only 3rd and 5th Butterworth passive filters are covered, but again, provides normalized circuits to quickly scale them to fit your needs, quite useful indeed.The book also has a chapter covering a bit of layout, pcb, components, etc.. similar to "The Circuit Companion's handbook" however what makes it different from such book, or many of the books out there is that it offers a very interesting case study about the layout for a high power laser driver.Another large part of the book is dedicated to ADC, DAC and general analog-digital interfacing, with a particularly great chapter on ADCs with case studies explaining different sensors and applications.In general I would say this is a great book, with real gems in there, you wont become an expert analog designer thats for sure and you will not find the secret and holly grail of analog design, not all of the circuits in the book are "World class designs" as the title suggest, but you'll surely learn a lot of new tricks and circuits, plus youll get into the mindset of some of the best analog designeers, and hopefully try to apply it on your own designs..If your are an analog designer or hoping on becoming one, this book is for you. Dont be fooled by the fact that the editor (Bob Pease) mentions that the math in there is at the highschool level, yes you wont find big differential equations or Fourier series and such, but you definitely need a solid background in electric circuit theory, control theory, opamps, transistors and some electromagnetic theory to fully understand the content of this book, stuff like poles, zeros, transfer functions, Bode plots,

compensation techniques, opamp equations, etc.. are mentioned all the time, it is not a begginers book.

I was disappointed because much of this material was published elsewhere 18 years ago in the Jim Williams art and science books or online.Analog Circuit Design: Art, Science and Personalities (EDN Series for Design Engineers)The best new material is from Bonnie Baker about sigma-delta ADCs and when to use them or SAR ADCs.This somewhat resembles a textbook, with some basic material stitching together the more advanced stuff, and could possibly be used in that way. Some chapters seem to have been updated in a half-hearted way, such as the discussion of passives which mentions SMT as an option, but then goes on to discuss carbon comp and carbon film as relevant technologies. And please give the whining about Spice a rest, or at least update it. Two AT clones and megabytes of unused software? We're way beyond that now man. It's gigabytes of unused software.Some of the basic tutorials seem uninspired too, like the "Review of Feedback Systems" with mandatory mention of the useless Routh criterion, etc. If you have a transfer function and want to see what it does, then get a computer dude. I understand it was once common to do division without a calculator, and for some reason they also still teach that in school.

I'm a hobbyist and most of this book is beyond me. However, when I have needed to understand a parameter in excruciating detail to make a circuit work, it has saved me. This isn't a cover to cover read, but an excellent reference, even for me (a very amateur hobbyist).

Really great book to read. Gives insights which most textbooks recommended in schools do not.Great material on feedback. I mostly use it as a bed time read.

OK, it is not really a text book and it is not really (all) by the famous/infamous Bob Pease, but nevertheless it is a good book to have on hand if you need to design analogue circuits for the real world.

Design) Design with Operational Amplifiers and Analog Integrated Circuits Design of Analog CMOS Integrated Circuits Fundamentals of Analog Circuits (2nd Edition) Vlsi Analog Signal Processing Circuits Foundations Of Analog and Digital Electronic Circuits Designing Amplifier Circuits (Analog Circuit Design) CMOS Digital Integrated Circuits: A First Course (Materials, Circuits and Devices) The Insiders Guide To Hiring A World-Class Dental Team: A Revolutionary Approach To Recruiting, Hiring, Training, and Retaining, World-Class Dental Professionals 101 Tennis Tips From A World Class Coach VOLUME 1: A Common Sense Approach to Tennis (101 Tennis Tips From A World Class Tennis Coach) Just Cross Stitch May/June 2009 (15 Exclusive Designs, Two Canadian Lighthouse Designs, Discover Donna Vermillion Giampa’s Fabulous Floral Pillows, Elegant Blackwork Designs, Create a Summer Ornament, Vol. 27, No. 3) The New Analog: Listening and Reconnecting in a Digital World FPGAs: World Class Designs White Working Class: Overcoming Class Cluelessness in America Pro Flash Manual: A Michael Willems Dutch Master Class Manual (The Michael Willems "Dutch Master Class" series Book 2)