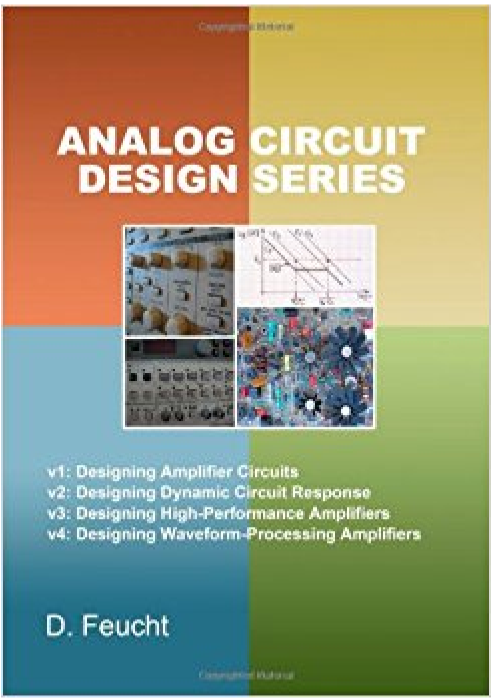
Analog Circuit Design Series



Synopsis

Analog Circuit Design is a four-volume set of books that reduce the concepts of analog electronics to their simplest, most obvious form which can easily be applied (even quantitatively) with minimal effort. The emphasis of the set is to teach through inspection how circuits work and how to apply the same techniques to circuits of the same class.The first volume, Amplifier Circuits, presents the basic principles of transistor circuit analysis, basic per-stage building blocs, and feedback. The second volume, Dynamic Circuit Response extends coverage to include reactances and their time- and frequency-related behavioral consequences. The third volume High Performance Amplifiers is an advanced treatment of amplifier design/analysis emphasizing both wideband and precision amplification. The fourth volume Signal Processing Circuits presents a variety of analog non-amplifier circuits, including voltage references, current sources, filters, hysteresis switches and oscilloscope trigger and sweep circuitry among many more topics.The four volumes are available for single purchase as well as this set.

Book Information

Series: Analog Circuit Design
Paperback: 900 pages
Publisher: SciTech Publishing (December 1, 2010)
Language: English
ISBN-10: 1891121871
ISBN-13: 978-1891121876
Product Dimensions: 2.2 x 5.8 x 8.8 inches
Shipping Weight: 3.4 pounds (View shipping rates and policies)
Average Customer Review: 3.9 out of 5 stars 2 customer reviews
Best Sellers Rank: #2,422,770 in Books (See Top 100 in Books) #62 inÃ Â Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Solid State #708 inÃ Â Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Design

Customer Reviews

Key Features: - Little known circuits and techniques are revealed that can improve your circuit design and analysis skills. - Explains fast, accurate, and simple circuit methods. - Simulators will not create your circuits: this shows how. - Graphically-driven presentation of concepts; like a series of seminars. - Written by 30 year veteran designer.

Dennis Feucht heads Innovatia Laboratories, involved with analog circuits, motion control, power electronics, microcomputer-based instrumentation, electromechanics, and automation. Feucht is an electronics engineer with extensive experience doing leading-edge electronics design of high-performance test instruments, robotics, power conversion, and motor drives for over 30 years.

There is some merit to this series. Unfortunately it is hard to follow some of the analysis, and it will leave the inexperienced young electronics professional unable to follow....I have a fair bit of experience, and I find certain sections hard to follow.Another thing is there are examples of bad amplifier analysis or circuits that just won’t work.Two examples:Botched amplifier noise analysis.ON page 95, in Volume 3, under his example of opamp input noise he has a completely botched analysis of the output noise. He doesn’t give an equation (see what I mean?), but it’s not too hard to figure out what he is doing.His equation (not given, but intuited from data given):eno=sqrt(eni^2 + 2(enR)^2+ (in*rin||Rfb)^2) = 61.1nV/rtHz All Wrong!The proper equation:eno=sqrt(((1+Rfb/rin)*eni)^2 + (in*Rfb)^2 + 2(enR)^2) = 70.8nV/rtHzThe only reason he ends up somewhat close to the correct answer is because the 100k resistors used in his example comprise the dominant source of noise. Its obvious if you are in an inverting gain of 1 that the amplifier itself is in a noise gain of 2, which means you have to at least get 2x the input referred voltage noise at the output.....(1+Rfb/rin)*eni or 40nV^rtHz. The resistors contribute the sqrt(2)*40.7nV/rtHz...or 57.55nV/rtHz....the current noise is only gained up to the output by the feedback resistor in*rfb = 10nV/rtHz. Rss those together you get the 70.8nV/rtHz.Another example of a circuit that will not work is the one on page 125, which has positive feedback, and would latch at one supply rail or the other depending on amplifier offset.

For any person wanting to learn the fine details of analog solid state design the series of books by Feucht is excellent.He is an experienced and competent engineer who handles his subject clearly and professionally.His background as a vertical amplifier designer at Tektronix gives him a solid foundation for this book on amplifier design. Here transistor modelling is covered in detail and several working circuits are given and can be checked with SPICE or by construction.Young engineers in training will benefit from the foundational approach used. Those who are accustomed mainly to using opamps as building blocks will learn the fundamentals of discrete transistor multistage amplifier design. As a seasoned analog designer myself, I recommend the book highly.

Integrated circuit devices and components (Integrated-circuit technology, analog and logic circuit design, memory and display devices) Analog Circuit Design, Volume 2: Immersion in the Black Art of Analog Design Winter Circuit (Show Circuit Series -- Book 2) (The Show Circuit) Analog Circuit Design Volume Three: Design Note Collection CMOS Analog Circuit Design (The Oxford Series in Electrical and Computer Engineering) Analog Circuit Design Series Zen of Analog Circuit Design Analog Circuit Design: A Tutorial Guide to Applications and Solutions An Analog Electronics Companion: Basic Circuit Design for Engineers and Scientists Analog Integrated Circuit Design Designing Amplifier Circuits (Analog Circuit Design) Analog Methods for Computer-Aided Circuit Analysis and Diagnosis (Electrical and Computer Engineering) Summer Circuit (Show Circuit Series -- Book 1) The A Circuit (An A Circuit Novel Book 1) Off Course: An A Circuit Novel (The A Circuit) My Favorite Mistake: An A Circuit Novel (The A Circuit) Rein It In: An A Circuit Novel (The A Circuit) Skew-Tolerant Circuit Design (The Morgan Kaufmann Series in Computer Architecture and Design) Foundations of Analog and Digital Electronic Circuits (The Morgan Kaufmann Series in Computer Architecture and Design) Graphic Design Success: Over 100 Tips for Beginners in Graphic Design: Graphic Design Basics for Beginners, Save Time and Jump Start Your Success (graphic ... graphic design beginner, design skills)