

Gray Meyer Analog Integrated Circuits Solutions

Market_Desc: · Electrical Engineers· Computer Engineers Special Features: · The new edition features coverage of cutting edge topics--more advanced CMOS device electronics to include short-channel effects, weak inversion and impact ionization· Coverage of state-of-the-art IC processes shows how modern integrated circuits are fabricated, including recent issues like heterojunction bipolar transistors, copper interconnect and low permittivity dielectric materials· Comprehensive and unified treatment of bipolar and CMOS circuits helps readers design real-world amplifiers in silicon About The Book: The text provides a comprehensive treatment of analog integrated circuit analysis and design starting from the basics and through current industrial practices. The authors combine bipolar, CMOS and BiCMOS analog integrated-circuit design into a unified treatment that stresses their commonalities and highlights their differences. The book provides the reader with valuable insights into the relative strengths and weaknesses of these important technologies.

As the frequency of communication systems increases and the dimensions of transistors are reduced, more and more stringent performance requirements are placed on analog circuits. This is a trend that is bound to continue for the

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foreseeable future and while it does, understanding performance trade-offs will constitute a vital part of the analog design process. It is the insight and intuition obtained from a fundamental understanding of performance conflicts and trade-offs, that ultimately provides the designer with the basic tools necessary for effective and creative analog design. Trade-offs in Analog Circuit Design, which is devoted to the understanding of trade-offs in analog design, is quite unique in that it draws together fundamental material from, and identifies interrelationships within, a number of key analog circuits. The book covers ten subject areas: Design methodology, Technology, General Performance, Filters, Switched Circuits, Oscillators, Data Converters, Transceivers, Neural Processing, and Analog CAD. Within these subject areas it deals with a wide diversity of trade-offs ranging from frequency-dynamic range and power, gain-bandwidth, speed-dynamic range and phase noise, to tradeoffs in design for manufacture and IC layout. The book has by far transcended its original scope and has become both a designer's companion as well as a graduate textbook. An important feature of this book is that it promotes an intuitive approach to understanding analog circuits by explaining fundamental relationships and, in many cases, providing practical illustrative examples to demonstrate the inherent basic interrelationships and trade-offs. Trade-offs in Analog Circuit Design draws together 34

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contributions from some of the world's most eminent analog circuits-and-systems designers to provide, for the first time, a comprehensive text devoted to a very important and timely approach to analog circuit design.

Never HIGHLIGHT a Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780471321682 .

Analog Circuit Design

- Applicable for bookstore catalogue

It is a great honor to provide a few words of introduction for Dr. Georges Gielen's and Prof. Willy Sansen's book "Symbolic analysis for automated design of analog integrated circuits". The symbolic analysis method presented in this book represents a significant step forward in the area of analog circuit design. As demonstrated in this book, symbolic analysis opens up new possibilities for the development of computer-aided design (CAD) tools that can analyze an analog circuit topology and automatically size the components for a given set of specifications. Symbolic analysis even has the potential to improve the training of young analog circuit designers and to guide more experienced designers through

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second-order phenomena such as distortion. This book can also serve as an excellent reference for researchers in the analog circuit design area and creators of CAD tools, as it provides a comprehensive overview and comparison of various approaches for analog circuit design automation and an extensive bibliography. The world is essentially analog in nature, hence most electronic systems involve both analog and digital circuitry. As the number of transistors that can be integrated on a single integrated circuit (IC) substrate steadily increases over time, an ever increasing number of systems will be implemented with one, or a few, very complex ICs because of their lower production costs. A clear, detailed introduction to modern analog and digital electronics, complete with simulation and design exercises.

The Fifth Edition of this academically rigorous text provides a comprehensive treatment of analog integrated circuit analysis and design starting from the basics and through current industrial practices. The authors combine bipolar, CMOS and BiCMOS analog integrated-circuit design into a unified treatment that stresses their commonalities and highlights their differences. The comprehensive coverage of the material will provide the student with valuable insights into the relative strengths and weaknesses of these important technologies.

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A practical, engineering book discussing the most modern and general techniques for designing analog integrated circuits which are not digital (excluding computer circuits). Covers the basics of the devices, manufacturing technology, design procedures, shortcuts, and analytic techniques. Includes examples and illustrations of the best current practice.

Low-Voltage Low-Power Analog Integrated Circuits brings together in one place important contributions and state-of-the-art research results in this rapidly advancing area. Low-Voltage Low-Power Analog Integrated Circuits serves as an excellent reference, providing insight into some of the most important issues in the field. Over the years, the fundamentals of VLSI technology have evolved to include a wide range of topics and a broad range of practices. To encompass such a vast amount of knowledge, The VLSI Handbook focuses on the key concepts, models, and equations that enable the electrical engineer to analyze, design, and predict the behavior of very large-scale integrated circuits. It provides the most up-to-date information on IC technology you can find. Using frequent examples, the Handbook stresses the fundamental theory behind professional applications. Focusing not only on the traditional design methods, it contains all relevant sources of information and tools to assist you in performing your job. This includes software, databases, standards,

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seminars, conferences and more. The VLSI Handbook answers all your needs in one comprehensive volume at a level that will enlighten and refresh the knowledge of experienced engineers and educate the novice. This one-source reference keeps you current on new techniques and procedures and serves as a review for standard practice. It will be your first choice when looking for a solution.

The purpose of this book is to present analysis and design principles, procedures and techniques of analog integrated circuits which are to be implemented in MOS (metal oxide semiconductor) technology. MOS technology is becoming dominant in the realization of digital systems, and its use for analog circuits opens new possibilities for the design of complex mixed analog/digital VLSI (very large scale integration) chips. Although we are focusing attention in this book principally on circuits and systems which can be implemented in CMOS technology, many considerations and structures are of a general nature and can be adapted to other promising and emerging technologies, namely GaAs (Gallium Arsenide) and BiMOS (bipolar MOS, i. e. circuits which combine both bipolar and CMOS devices) technology. Moreover, some of the structures and circuits described in this book can also be useful without integration. In this book we describe two large classes of analog integrated circuits: • switched capacitor (SC) networks, • continuous-time CMOS (unswitched) circuits. SC networks are sampled-data systems in which electric charges are transferred from one point to another at regular discrete intervals of time and thus the signal samples are stored and

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processed. Other circuits belonging to this class of sampled-data systems are charge transfer devices (CTD) and charge coupled devices (CCD). In contrast to SC circuits, continuous-time CMOS circuits operate continuously in time. They can be considered as subcircuits or building blocks (e. g.

When intending to build electronic filters, young engineers should be aware of the fundamental principles while not getting bogged down in intricate and elaborate mathematical aspects. A presentation of the basic principles supplemented by numerical programs illustrating the design technique will fulfil these requirements. There is not much by way of competition in this area. Much of the existing competition is older and does not include many of the newer ideas present in this book, such as current mode filters.

?: Analog MOS integrated circuits for signal processing/Roubik Gregorian, Gabor C. Temes. -- Wiley, 1986

Praise for CMOS: Circuit Design, Layout, and Simulation Revised Second Edition from the Technical Reviewers "A refreshing industrial flavor. Design concepts are presented as they are needed for 'just-in-time' learning. Simulating and designing circuits using SPICE is emphasized with literally hundreds of examples. Very few textbooks contain as much detail as this one. Highly recommended!" --Paul M. Furth, New Mexico State University "This book builds a solid knowledge of CMOS circuit design from the ground up. With coverage of process integration, layout, analog and digital models, noise

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mechanisms, memory circuits, references, amplifiers, PLLs/DLLs, dynamic circuits, and data converters, the text is an excellent reference for both experienced and novice designers alike." --Tyler J. Gomm, Design Engineer, Micron Technology, Inc. "The Second Edition builds upon the success of the first with new chapters that cover additional material such as oversampled converters and non-volatile memories. This is becoming the de facto standard textbook to have on every analog and mixed-signal designer's bookshelf." --Joe Walsh, Design Engineer, AMI Semiconductor

CMOS circuits from design to implementation CMOS: Circuit Design, Layout, and Simulation, Revised Second Edition covers the practical design of both analog and digital integrated circuits, offering a vital, contemporary view of a wide range of analog/digital circuit blocks, the BSIM model, data converter architectures, and much more. This edition takes a two-path approach to the topics: design techniques are developed for both long- and short-channel CMOS technologies and then compared. The results are multidimensional explanations that allow readers to gain deep insight into the design process. Features include: Updated materials to reflect CMOS technology's movement into nanometer sizes Discussions on phase- and delay-locked loops, mixed-signal circuits, data converters, and circuit noise More than 1,000 figures, 200 examples, and over 500 end-of-chapter problems In-depth coverage of both analog and digital circuit-level design techniques Real-world process parameters and design rules The book's Web site, CMOSedu.com, provides: solutions to the book's problems; additional

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homework problems without solutions; SPICE simulation examples using HSPICE, LTspice, and WinSpice; layout tools and examples for actually fabricating a chip; and videos to aid learning

CMOS, 20, EDA

Analog Integrated Circuits for Communication: Principles, Simulation and Design, Second Edition covers the analysis and design of nonlinear analog integrated circuits that form the basis of present-day communication systems. Both bipolar and MOS transistor circuits are analyzed and several numerical examples are used to illustrate the analysis and design techniques developed in this book. Especially unique to this work is the tight coupling between the first-order circuit analysis and circuit simulation results. Extensive use has been made of the public domain circuit simulator Spice, to verify the results of first-order analyses, and for detailed simulations with complex device models. Highlights of the new edition include: A new introductory chapter that provides a brief review of communication systems, transistor models, and distortion generation and simulation. Addition of new material on MOSFET mixers, compression and intercept points, matching networks. Revisions of text and explanations where necessary to reflect the new organization of the book Spice input files for all the

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circuit examples that are available to the reader from a website. Problem sets at the end of each chapter to reinforce and apply the subject matter. An instructors solutions manual is available on the book's webpage at springer.com. Analog Integrated Circuits for Communication: Principles, Simulation and Design, Second Edition is for readers who have completed an introductory course in analog circuits and are familiar with basic analysis techniques as well as with the operating principles of semiconductor devices. This book also serves as a useful reference for practicing engineers.

This edition combines the consideration of metal-oxide-semiconductors (MOS) and bipolar circuits into a unified treatment that also includes MOS-bipolar connections made possible by BiCMOS technology. Contains extensive use of SPICE, especially as an integral part of many examples in the problem sets as a more accurate check on hand calculations and as a tool to examine complex circuit behavior beyond the scope of hand analysis. Concerned largely with the design of integrated circuits, a considerable amount of material is also included on applications.

A book is like a window that allows you to look into the world. The window is shaped by the author and that makes that every window presents a unique view of the world. This is certainly true for this book. It is shaped by the topics and the

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projects throughout my career. Even more so, this book reflects my own style of working and thinking. That starts already in Chap. 2. When I joined Philips Research in 1979, many of my colleagues used little paper notebooks to keep track of the most used equations and other practical things. This notebook was the beginning for Chap. 2: a collection of topics that form the basis for much of the other chapters. Chapter 2 is not intended to explain these topics, but to refresh your knowledge and help you when you need some basics to solve more complex issues. In the chapters discussing the fundamental processes of conversion, you will recognize my preoccupation with mathematics. I really enjoy finding an equation that properly describes the underlying mechanism.

Nevertheless mathematics is not a goal in itself: the equations help to understand the way the variables are connected to the result. Real insight comes from understanding the physics and electronics. In the chapters on circuit design I have tried to reduce the circuit diagrams to the simplest form, but not simpler. . . I do have private opinions on what works and what should not be applied.

ANALYSIS AND DESIGN OF ANALOG INTEGRATED CIRCUITS, 5TH ED,
John Wiley & Sons

Analog Integrated Circuits deals with the design and analysis of modern analog

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circuits using integrated bipolar and field-effect transistor technologies. This book is suitable as a text for a one-semester course for senior level or first-year graduate students as well as a reference work for practicing engineers. Advanced students will also find the text useful in that some of the material presented here is not covered in many first courses on analog circuits. Included in this is an extensive coverage of feedback amplifiers, current-mode circuits, and translinear circuits. Suitable background would be fundamental courses in electronic circuits and semiconductor devices. This book contains numerous examples, many of which include commercial analog circuits. End-of-chapter problems are given, many illustrating practical circuits. Chapter 1 discusses the models commonly used to represent devices used in modern analog integrated circuits. Presented are models for bipolar junction transistors, junction diodes, junction field-effect transistors, and metal-oxide semiconductor field-effect transistors. Both large-signal and small-signal models are developed as well as their implementation in the SPICE circuit simulation program. The basic building blocks used in a large variety of analog circuits are analyzed in Chapter 2; these consist of current sources, dc level-shift stages, single-transistor gain stages, two-transistor gain stages, and output stages. Both bipolar and field-effect transistor implementations are presented. Chapter 3 deals with operational amplifier

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circuits. The four basic op-amp circuits are analyzed: (1) voltage-feedback amplifiers, (2) current-feedback amplifiers, (3) current-differencing amplifiers, and (4) transconductance amplifiers. Selected applications are also presented. Whether you are a dedicated audiophile who wants to gain a more complete understanding of the design issues behind a truly great amp, or a professional electronic designer seeking to learn more about the art of amplifier design, there can be no better place to start than with the 35 classic magazine articles collected together in this book. Douglas Self offers a tried and tested method for designing audio amplifiers in a way that improves performance at every point in the circuit where distortion can creep in – without significantly increasing cost. Through the articles in this book, he takes readers through the causes of distortion, measurement techniques, and design solutions to minimise distortion and efficiency. Most of the articles are based round the design of a specific amplifier, making this book especially valuable for anyone considering building a Self amplifier from scratch. Self is senior designer with a high-end audio manufacturer, as well as a prolific and highly respected writer. His career in audio design is reflected in the articles in this book, originally published in the pages of Electronics World and Wireless World over a 25 year period. An audio amp design cookbook, comprising 35 of Douglas Self's definitive audio design articles

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Complete designs for readers to build and adapt An anthology of classic designs for electronics enthusiasts, Hi-Fi devotees and professional designers alike An introduction to the design of analog VLSI circuits. Neuromorphic engineers work to improve the performance of artificial systems through the development of chips and systems that process information collectively using primarily analog circuits. This book presents the central concepts required for the creative and successful design of analog VLSI circuits. The discussion is weighted toward novel circuits that emulate natural signal processing. Unlike most circuits in commercial or industrial applications, these circuits operate mainly in the subthreshold or weak inversion region. Moreover, their functionality is not limited to linear operations, but also encompasses many interesting nonlinear operations similar to those occurring in natural systems. Topics include device physics, linear and nonlinear circuit forms, translinear circuits, photodetectors, floating-gate devices, noise analysis, and process technology.

BiCMOS Technology and Applications, Second Edition provides a synthesis of available knowledge about the combination of bipolar and MOS transistors in a common integrated circuit - BiCMOS. In this new edition all chapters have been updated and completely new chapters on emerging topics have been added. In addition, BiCMOS Technology and Applications, Second Edition provides the reader with a knowledge of either CMOS or Bipolar

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technology/design a reference with which they can make educated decisions regarding the viability of BiCMOS in their own application. BiCMOS Technology and Applications, Second Edition is vital reading for practicing integrated circuit engineers as well as technical managers trying to evaluate business issues related to BiCMOS. As a textbook, this book is also appropriate at the graduate level for a special topics course in BiCMOS. A general knowledge in device physics, processing and circuit design is assumed. Given the division of the book, it lends itself well to a two-part course; one on technology and one on design. This will provide advanced students with a good understanding of tradeoffs between bipolar and MOS devices and circuits.

A Guide to Analog ASICs is a working reference for the engineer who regularly uses analog custom technology or plans to use it in a product. The book includes a detailed analysis of analog and digital application specific integrated circuits (ASICs), the vendor selection process, cost trade-offs, and design-options (in-house, design center, use of vendor design resources). After introducing the development of analog ASICs, ASIC vendors, development cycles, and cost considerations, the text reviews basic global semiconductor technology, IC fabrication techniques, and the limitations of linear IC design. The components found inside the chip are integrated resistors, capacitors, transistors, diodes, and metal connections. The text explains building block circuits, how these are used to construct complex circuitry, and how the Simulation Program with Integrated Circuit Emphasis (SPICE) can check for circuit performance. The selection of the chip's package is important and depends on several factors, such as thermal size, physical size, PC board technology, number of pins, die size. When tested, a typical product should have a failure rate that follows a curve composed of a failure

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rate (X-axis) versus time (Y-axis). The book also provides suggestions on vendor selections including vendor identification, site visitation, and price negotiations. The book is suitable for computer engineers, designers of industrial processes, and researchers involved in electrical, computer, or other devices using integrated circuits.

Analog circuit design is often the bottleneck when designing mixed analog-digital systems. A Top-Down, Constraint-Driven Design Methodology for Analog Integrated Circuits presents a new methodology based on a top-down, constraint-driven design paradigm that provides a solution to this problem. This methodology has two principal advantages: (1) it provides a high probability for the first silicon which meets all specifications, and (2) it shortens the design cycle. A Top-Down, Constraint-Driven Design Methodology for Analog Integrated Circuits is part of an ongoing research effort at the University of California at Berkeley in the Electrical Engineering and Computer Sciences Department. Many faculty and students, past and present, are working on this design methodology and its supporting tools. The principal goals are: (1) developing the design methodology, (2) developing and applying new tools, and (3) 'proving' the methodology by undertaking 'industrial strength' design examples. The work presented here is neither a beginning nor an end in the development of a complete top-down, constraint-driven design methodology, but rather a step in its development. This work is divided into three parts. Chapter 2 presents the design methodology along with foundation material. Chapters 3-8 describe supporting concepts for the methodology, from behavioral simulation and modeling to circuit module generators. Finally, Chapters 9-11 illustrate the methodology in detail by presenting the entire design cycle through three large-scale examples. These include the design of a current source D/A converter, a Sigma-Delta A/D

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converter, and a video driver system. Chapter 12 presents conclusions and current research topics. A Top-Down, Constraint-Driven Design Methodology for Analog Integrated Circuits will be of interest to analog and mixed-signal designers as well as CAD tool developers. Practical Synthesis of High-Performance Analog Circuits presents a technique for automating the design of analog circuits. Market competition and the astounding pace of technological innovation exert tremendous pressure on circuit design engineers to turn ideas into products quickly and get them to market. In digital Application Specific Integrated Circuit (ASIC) design, computer aided design (CAD) tools have substantially eased this pressure by automating many of the laborious steps in the design process, thereby allowing the designer to maximise his design expertise. But the world is not solely digital. Cellular telephones, magnetic disk drives, neural networks and speech recognition systems are a few of the recent technological innovations that rely on a core of analog circuitry and exploit the density and performance of mixed analog/digital ASICs. To maximize profit, these mixed-signal ASICs must also make it to market as quickly as possible. However, although the engineer working on the digital portion of the ASIC can rely on sophisticated CAD tools to automate much of the design process, there is little help for the engineer working on the analog portion of the chip. With the exception of simulators to verify the circuit design when it is complete, there are almost no general purpose CAD tools that an analog design engineer can take advantage of to automate the analog design flow and reduce his time to market. Practical Synthesis of High-Performance Analog Circuits presents a new variation-tolerant analog synthesis strategy that is a significant step towards ending the wait for a practical analog synthesis tool. A new synthesis strategy is presented that can fully automate the path from a circuit topology and performance

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specifications to a sized variation-tolerant circuit schematic. This strategy relies on asymptotic waveform evaluation to predict circuit performance and simulated annealing to solve a novel non-linear infinite programming optimization formulation of the circuit synthesis problem via a sequence of smaller optimization problems. Practical Synthesis of High-Performance Analog Circuits will be of interest to analog circuit designers, CAD/EDA industry professionals, academics and students.

This book is essential for audio power amplifier designers and engineers for one simple reason...it enables you as a professional to develop reliable, high-performance circuits. The Author Douglas Self covers the major issues of distortion and linearity, power supplies, overload, DC-protection and reactive loading. He also tackles unusual forms of compensation and distortion produced by capacitors and fuses. This completely updated fifth edition includes four NEW chapters including one on The XD Principle, invented by the author, and used by Cambridge Audio. Crosstalk, power amplifier input systems, and microcontrollers in amplifiers are also now discussed in this fifth edition, making this book a must-have for audio power amplifier professionals and audiophiles.

Intuitive Analog Circuit Design outlines ways of thinking about analog circuits and systems that let you develop a feel for what a good, working analog circuit design should be. This book reflects author Marc Thompson's 30 years of experience designing analog and power electronics circuits and teaching graduate-level analog circuit design, and is the ideal reference for anyone who needs a straightforward introduction to the subject. In this book, Dr. Thompson describes intuitive and "back-of-the-envelope" techniques for designing and analyzing analog circuits, including transistor amplifiers (CMOS, JFET, and bipolar), transistor switching, noise in

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analog circuits, thermal circuit design, magnetic circuit design, and control systems. The application of some simple rules of thumb and design techniques is the first step in developing an intuitive understanding of the behavior of complex electrical systems. Introducing analog circuit design with a minimum of mathematics, this book uses numerous real-world examples to help you make the transition to analog design. The second edition is an ideal introductory text for anyone new to the area of analog circuit design. Design examples are used throughout the text, along with end-of-chapter examples. Covers real-world parasitic elements in circuit design and their effects

This comprehensive book deals with feedback and feedback amplifiers, presenting original material on the topic of feedback circuits. After describing the fundamental properties of feedback, the book illustrates techniques of analysis for greater insight into feedback amplifiers and design strategies to optimise their performance.

Market_Desc: Engineers
Special Features: " Updates the coverage of bipolar technologies"
Enhances the discussion of biCMOS"
Provides a more unified treatment of digital and analog circuit design while strengthening the coverage of CMOS"
Removes the chapter on non-linear analog circuits"
Adds a new operational amplifier example to chapter 11
About The Book: This is the only comprehensive book in the market for engineers that covers CMOS, bipolar technologies, and biCMOS integrated circuits. The fifth edition retains its completeness, updates the coverage of bipolar technologies, and enhances the discussion of biCMOS. It provides a more unified treatment of digital and analog circuit design while strengthening the coverage of CMOS. The chapter on non-linear analog circuits has been removed and chapter 11 has been updated to include an operational amplifier example. With its streamlined and up-

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to-date coverage, more engineers can turn to this resource to explore key concepts in the field. This book brings together important contributions and state-of-the-art research results in the rapidly advancing area of symbolic analysis of analog circuits. It is also of interest to those working in analog CAD. The book is an excellent reference, providing insights into some of the most important issues in the symbolic analysis of analog circuits.

Although it is now possible to integrate many millions of transistors on a single chip, traditional digital circuit technology is now reaching its limits, facing problems of cost and technical efficiency when scaled down to ever-smaller feature sizes. The analysis of biological neural systems, especially for visual processing, has allowed engineers to better understand how complex networks can effectively process large amounts of information, whilst dealing with difficult computational challenges. Analog and parallel processing are key characteristics of biological neural networks. Analog VLSI circuits using the same features can therefore be developed to emulate brain-style processing. Using standard CMOS technology, they can be cheaply manufactured, permitting efficient industrial and consumer applications in robotics and mobile electronics. This book explores the theory, design and implementation of analog VLSI circuits, inspired by visual motion processing in biological neural networks. Using a novel approach pioneered by the author himself, Stocker explains in detail the construction of a series of electronic chips, providing the reader with a valuable practical insight into the technology. Analog VLSI Circuits for the Perception of Visual Motion: analyses the computational problems in visual motion perception; examines the issue of optimization in analog networks through high level processes such as motion segmentation and selective attention; demonstrates network implementation in analog VLSI CMOS technology to provide

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computationally efficient devices; sets out measurements of final hardware implementation; illustrates the similarities of the presented circuits with the human visual motion perception system; includes an accompanying website with video clips of circuits under real-time visual conditions and additional supplementary material. With a complete review of all existing neuromorphic analog VLSI systems for visual motion sensing, Analog VLSI Circuits for the Perception of Visual Motion is a unique reference for advanced students in electrical engineering, artificial intelligence, robotics and computational neuroscience. It will also be useful for researchers, professionals, and electronics engineers working in the field.

The essentials of analog circuit design with a unique all-region MOSFET modeling approach. Explains the circuit design of silicon optoelectronic integrated circuits (OEICs), which are central to advances in wireless and wired telecommunications. The essential features of optical absorption are summarized, as is the device physics of photodetectors and their integration in modern bipolar, CMOS, and BiCMOS technologies. This information provides the basis for understanding the underlying mechanisms of the OEICs described in the main part of the book. In order to cover the topic comprehensively, Silicon Optoelectronic Integrated Circuits presents detailed descriptions of many OEICs for a wide variety of applications from various optical sensors, smart sensors, 3D-cameras, and optical storage systems (DVD) to fiber receivers in deep-sub- μm CMOS. Numerous detailed illustrations help to elucidate the material.

A bestseller in its first edition, The Circuits and Filters Handbook has been thoroughly updated to provide the most current, most comprehensive information available in both the classical and emerging fields of circuits and filters, both analog and digital. This edition contains 29 new

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chapters, with significant additions in the areas of computer-

Douglas Self offers a tried and tested method for designing audio amplifiers in a way that improves performance at every point in the circuit where distortion can creep in - without significantly increasing cost. His quest for the Blameless Amplifier takes readers through the causes of distortion, measurement techniques, and design solutions to minimise distortion and efficiency. The result is a book that is crammed with unique insights into audio design and performance, as well as complete amplifier designs and schematics. Whether you are a dedicated audiophile who wants to gain a more complete understanding of the design issues behind a truly great amp, or a professional electronic designer seeking to learn more about the art of amplifier design, Douglas Self's Handbook is the essential guide to design principles and practice. Self is senior designer with a high-end audio manufacturer, as well as author of numerous magazine articles in the pages of Electronics World / Wireless World. His career in audio design is the foundation of a book that is based solidly on practical experience as well as a dedication to a methodology based on measurement, analysis and scientific design principles. The fourth edition includes new material on DC offset protection circuitry, the design of DC servos and electrical safety and safety standards. In addition, there is a new chapter on Class D power amplifiers. * The definitive guide to understanding and designing audio amplifiers * Includes Douglas Self's classic amp designs for readers to build and adapt * A classic work for electronics enthusiasts, Hi-Fi devotees and professional designers alike

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