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Inside SPICE Electronics Circuit SPICE Simulations with LTspice Switch-Mode Power Supplies Spice Simulations and Practical Designs Circuit Simulation with SPICE OPUS SMPS Simulation with SPICE 3 SPICE SPICE Circuit Handbook SPICE SPICE for Power Electronics and Electric Power Switch-mode Power Supplies Switch-Mode Power Supply Simulation: Designing with SPICE 3 Switch More Power Supply The Designer's Guide to Spice and Spectre® Inside SPICE Passive Circuit Analysis with LTspice® Simulation and Verification of Electronic and Biological Systems SPICE Simulations of Power Electronics Modeling and Simulation with Simulink® The SPICE Book SPICE for Power Electronics and Electric Power SPICE for Circuits and Electronics Using PSpice Switch-Mode Power Supplies, Second Edition MOSFET Models for SPICE Simulation Nonsmooth Modeling and Simulation for Switched Circuits Spice Integrated Circuit and System Design. Power and Timing Modeling, Optimization and Simulation Semiconductor Device Modeling with Spice Simulation and Optimization of Digital Circuits Electronic Circuit Analysis using LTSpice XVII Simulator Integrated Circuit and System Design. Power and Timing Modeling, Optimization and Simulation On-Chip Inductance in High Speed Integrated Circuits Modular Multilevel Converter Modelling and Simulation for HVDC Systems Parallel Sparse Direct Solver for Integrated Circuit Simulation Embedded Computer Systems: Architectures, Modeling, and Simulation BASIC ELECTRONICS FOR NON ELECTRICAL ENGINEERS (with MATLAB and Simulink Exercises) Substrate Noise Coupling in Mixed-Signal ASICs Integrated Circuit and System Design. Power and Timing Modeling, Optimization and Simulation Timing Analysis and Simulation for Signal Integrity Engineers A Practical Guide to Analog Behavioral Modeling for IC System Design BSIM4 and MOSFET Modeling for IC Simulation

Inside SPICE

1998

this is a guide to the spice simulation program which provides practical methods for generating simulations that are fast accurate and convergent the accompanying cd features a windows compatible version of rspice the author s simulator which can be used to model circuits

Electronics Circuit SPICE Simulations with LTspice

2015-02-26

this book is all about spice circuit simulations using ltspice ltspice is available free from linear technology ltspice is perhaps one of the most widely used free simulators it is a powerful simulator with a simple interface to handle the book covers the requirements of a laboratory course in spice simulations at an introductory level it can be used an aid to practical understanding in any undergraduate engineering course of analog electronics the book can also be used as an aid to any standard text on analog electronics salient features step by step simulation procedure is presented experiments are clearly illustrated brief theory on each topic for understanding is presented

Switch-Mode Power Supplies Spice Simulations and Practical Designs

2008-02-06

harness powerful spice simulation and design tools to develop cutting edge switch mode power supplies switch mode power supplies spice simulations and practical designs is a comprehensive resource on using spice as a power conversion design companion this book uniquely bridges analysis and market reality to teach the development and marketing of state of the art switching converters invaluable to both the graduating student and the experienced design engineer this guide explains how to derive founding equations of the most popular converters design safe reliable converters through numerous practical examples and utilize spice simulations to virtually breadboard a converter on the pc before using the soldering iron filled with more than 600 illustrations switch mode power supplies spice simulations and practical designs enables you to derive founding equations of popular converters understand and implement loop control via the book exclusive small signal models design safe reliable converters through practical examples use spice simulations to virtually breadboard a converter on the pc access design spreadsheets and simulation templates on the accompanying cd rom with numerous examples running on orcadË icapsË µcapË tinaË and more inside this powerful spice simulation and design resource introduction to power conversion small signal modeling feedback and control loops basic blocks and generic models simulation and design of nonisolated converters simulation and design of isolated converters front end rectification and power factor correction simulation and design of isolated converters the flyback simulation and design of isolated converters the forward

Circuit Simulation with SPICE OPUS

2009-06-23

this book is a unique combination of a basic guide to general analog circuit simulation and a spice opus software manual which may be used as a textbook or self study reference the book is divided into three parts mathematical theory of circuit analysis a crash course on spice opus and a complete spice opus reference guide all simulations as well as the free simulator software may be directly downloaded from the spice opus homepage spiceopus si circuit simulation with spice opus is intended for a wide audience of undergraduate and graduate students researchers and practitioners in electrical and systems engineering circuit design and simulation development

SMPS Simulation with SPICE 3

1997

the expert guidance needed to customize your spice circuits over the past decade simulation has become an increasingly integral part of the electronic circuit design process this resource is a compilation of 50 fully worked and simulated spice circuits that electronic designers can customize for use in their own projects unlike traditional circuit encyclopedias spice circuit handbook is unique in that it provides designers with not only the circuits to use but the techniques to simulate their customization

SPICE

1988

this guide to the pspice circuit simulator provides a tutorial approach to using pspice through graduated examples this edition includes enhanced pedagogical features and coverage of the newest capabilities of this program it explains the use of monte carlo methods in pspice for statistically computing estimates of how circuits will behave with variations in component values and derivation and use of two port parameters including s parameters it also includes an expanded section on group and time delay and on noise analysis as well as fuller descriptions and examples for using parameters functions and values defined by formulas to generalize circuit blocks and specify component values

SPICE Circuit Handbook

2010-08-02

to be accredited a power electronics course should cover a significant amount of design content and include extensive use of computer aided analysis with simulation tools such as spice based upon the authors experience in designing such courses spice for power electronics and electric power second edition integrates a spice simulator with a po

SPICE

1995

cd rom contains spice3 and ispice simulation models and examples from the book allowing easy customization

SPICE for Power Electronics and Electric Power

2005-11-02

this is a resource on using spice as a power conversion design companion the book bridges analysis and market reality to teach the development and marketing of state of the art switching converters it explains how to derive founding equations of the most popular converters and design safe reliable converters

Switch-mode Power Supplies

2008

engineering productivity in integrated circuit product design and velopment today is limited largely by the effectiveness of the cad tools used for those domains of product design that are highly dependent on transistor level circuit design and optimization such as high speed logic and memory mixed signal analog digital int faces rf functions power integrated circuits and so forth circuit simulation is perhaps the single most important tool as the complexity and performance of integrated electronic systems has increased with scaling of technology feature size the capabilities and sophistication of the underlying circuit simulation tools have correspondingly increased the absolute size of circuits requiring transistor level simulation has increased dramatically creating not only problems of computing power resources but also problems of task organization complexity management output representation initial condition setup and so forth also as circuits of more c plexity and mixed types of functionality are attacked with simu tion the spread between time constants or event time scales within the circuit has tended to become wider requiring new strategies in simulators to deal with large time constant spreads

Switch-Mode Power Supply Simulation: Designing with SPICE

2005-12-02

this book shows readers how to learn analog electronics by simulating circuits readers will be enabled to master basic electric circuit analysis as an essential component of their professional education the author s approach enables readers to learn theory as needed then immediately apply it to the simulation of circuits based on that theory while using the resulting tables graphs and waveforms to gain a deeper insight into the theory as well as where theory and practice diverge

Switch More Power Supply

2008-04

simulation and verification of electronic and biological systems provides a showcase for the circuit and multi domain simulation workshop held in san jose california usa on november 5 2009 the nine chapters are contributed by experts in the field and provide a broad discussion of recent developments on simulation modeling and verification of integrated circuits and biological systems specific topics include large scale parallel circuit simulation industrial practice of fast spice simulation structure preserving model order reduction of interconnects advanced simulation techniques for oscillator networks dynamic stability of static memories and biological systems as well as verification of analog integrated circuits simulation and verification are fundamental enablers for understanding analyzing and designing an extremely broad range of engineering and biological circuits and systems the design of nanometer integrated electronic systems and emerging biomedical applications have stimulated the development of novel simulation and verification techniques and methodologies simulation and verification of electronic and biological systems provides a broad discussion of recent advances on simulation modeling and verification of integrated circuits and biological systems and offers a basis for stimulating new innovations

The Designer’s Guide to Spice and Spectre®

2006-04-11

the essential intermediate and advanced topics of simulink are covered in the book the concept of multi domain physical modeling concept and tools in simulink are illustrated with examples for engineering systems and multimedia information the combination of simulink and numerical optimization methods provides new approaches for solving problems where solutions are not known otherwise

Inside SPICE

1995

this new book written by andre vladimirescu who was instrumental in the development of spice at the university of california berkeley introduces computer simulation of electrical and electronics circuits based on the spice standard relying on the functionality first supported in spice2 that is now supported in all spice programs this text is addressed to all users of electrical simulation the approach to learning circuit simulation is to interpret simulation results in relation to electrical engineering fundamentals the book asks the student to solve most circuit examples by hand before verifying the results with spice addressed to both the spice novice and the experienced user the first six chapters provide the relevant information on spice functionality for the analysis of linear as well as nonlinear circuits each of these chapters starts out with a linear example accessible to any new user of spice and proceeds with nonlinear transistor circuits the latter part of the book goes into more detail on such issues as functional and hierarchical models distortion analysis basic algorithms in spice and related options parameters and how to direct spice to find a solution when it does not converge to a solution the approach emphasizes that spice is not a substitute for knowledge of circuit operation but a complement the spice book is different from previously published books in the approach of solving circuit problems with a computer the solution to most circuit examples is sketched out by hand first and followed by a spice verification for more complex circuits it is not feasible to find the solution by hand but the approach stresses the need for the spice user tounderstand the results readers gain a better comprehension of spice thanks to the importance placed on the relation between ee fundamentals and computer simulation the tutorial approach advances from the hand solution of a circuit to spice verification and simulation results interpretation this book teaches the approach to electrical circuit simulation rather than a specific simulation program examples are simulated alternatively with spice2 spice3 or pspice accurate descriptions simulation rationale and cogent explanations make this an invaluable reference

Passive Circuit Analysis with LTspice®

2020-11-12

power electronics can be a difficult course for students to understand and for professors to teach simplifying the process for both spice for power electronics and electric power third edition illustrates methods of integrating industry standard spice software for design verification and as a theoretical laboratory bench helpful pspice software and program files available for download based on the author muhammad h rashid s considerable experience merging design content and spice into a power electronics course this vastly improved and updated edition focuses on helping readers integrate the spice simulator with a minimum amount of time and effort giving users a better understanding of the operation of a power electronics circuit the author explores the transient behavior of current and voltage waveforms for each and every circuit element at every stage the book also includes examples of all types of power converters as well as circuits with linear and nonlinear inductors new in this edition student learning outcomes slos listed at the start of each chapter changes to run on orcad version 9 2 added vprint1 and iprint1 commands and examples notes that identify important concepts examples illustrating evalue gvalue etable gtable elaplace glaplace efreq and gfreq mathematical relations for expected outcomes where appropriate the fourier series of the output voltages for rectifiers and inverters pspice simulations of dc link inverters and ac voltage controllers with pwm control this book demonstrates techniques of executing power conversions and ensuring the quality of the output waveforms rather than the accurate modeling of power semiconductor devices this approach benefits students enabling them to compare classroom results obtained with simple switch models of devices in addition a new chapter covers multi level converters assuming no prior knowledge of spice or pspice simulation the text provides detailed step by step instructions on how to draw a schematic of a circuit execute simulations and view or plot the output results it also includes suggestions for laboratory experiments and design problems that can be used for student homework assignments

Simulation and Verification of Electronic and Biological Systems

2011-01-12

circuit descriptions dc circuit analysis transient analysis ac circuit analysis advanced spice commands and analysis semiconductor diodes bipolar junction transistors field effect transistors op amp circuits digital logia circuits difficulties appendices a running pspice on pcs noise analysis nonlinear magnetic model

SPICE Simulations of Power Electronics

1996

the latest spice simulation and design tools for creating state of the art switchmode power supplies fully updated to incorporate new spice features and capabilities this practical guide explains step by step how to simulate test and improve switch mode power supply designs detailed formulas with founding equations are included based on the author s continued research and in depth handson work in the field this revised resource offers a collection of the latest spice solutions to the most difficult problem facing power supply designers creating smaller more heat efficient power supplies in shorter design cycles new to this edition complete analysis of rms currents for the three basic cells in ccm and dcm pwm switch at work in the small signal analysis of the dcm boost and the qr flyback ota based compensators complete transistor level tl431 model small signal analysis of the borderline operated boost pfc circuit operated in voltage or current mode all over power phenomena in qr or fixed frequency discontinuous continuous flyback converters small signal model of a qr flyback converter small signal model of the active clamp forward converter operated in voltagemode control electronic content design templates and examples available online switch mode power supplies spice simulations and practical designs second edition covers small signal modeling feedback and ciontrol loops basic blocks and generic switched models nonisolated converters off line converters flyback converters forward converters power factor correction

Modeling and Simulation with Simulink®

2022-03-07

an expert guide to understanding and making optimum use of bsim used by more chip designers worldwide than any other comparable model the berkeley short channel igfet model bsim has over the past few years established itself as the de facto standard mosfet spice model for circuit simulation and cmos technology development yet until now there have been no independent expert guides or tutorials to supplement the various bsim manuals currently available written by a noted expert in the field this book fills that gap in the literature by providing a comprehensive guide to understanding and making optimal use of bsim3 and bsim4 drawing upon his extensive experience designing with bsim william liu provides a brief history of the model discusses the various advantages of bsim over other models and explores the reasons why bsim3 has been adopted by the majority of circuit manufacturers he then provides engineers with the detailed practical information and guidance they need to master all of bsim s features he summarizes key bsim3 components represents the bsim3 model with equivalent circuits for various operating conditions provides a comprehensive glossary of modeling terminology lists alphabetically bsim3 parameters along with their meanings and relevant equations explores bsim3 s flaws and provides improvement suggestions describes all of bsim4 s improvements and new features provides useful spice files which are available online at the wiley ftp site

The SPICE Book

1994

nonsmooth modeling and simulation for switched circuits concerns the modeling and the numerical simulation of switched circuits with the nonsmooth dynamical systems nsds approach using piecewise linear and multivalued models of electronic devices like diodes transistors switches numerous examples ranging from introductory academic circuits to various types of power converters are analyzed and many simulation results obtained with the inria open source siconos software package are presented comparisons with spice and hybrid methods demonstrate the power of the nsds approach nonsmooth modeling and simulation for switched circuits is intended to researchers and engineers in the field of circuits simulation and design but may also attract applied mathematicians interested by the numerical analysis for nonsmooth dynamical systems as well as researchers from systems and control

SPICE for Power Electronics and Electric Power

2017-12-19

in many cases new designers of electronic circuits blindly search for ways to improve the design itself using a brute force hit and miss approach the intention of this book is to avoid this pitfall by teaching readers what not to do with spice this is accomplished by keying each example in this text to those presented in sedra and smith s microelectronic circuits 3 e where a complete hand analysis is provided

SPICE for Circuits and Electronics Using PSpice

1995

this book constitutes the refereed proceedings of the 16th international workshop on power and timing modeling optimization and simulation patmos 2006 the book presents 41 revised full papers and 23 revised poster papers together with 4 key notes and 3 industrial abstracts topical sections include high level design power estimation and modeling memory and register files low power digital circuits busses and interconnects low power techniques applications and soc design modeling and more

Switch-Mode Power Supplies, Second Edition

2014-06-04

publisher s note products purchased from third party sellers are not guaranteed by the publisher for quality authenticity or access to any online entitlements included with the product

MOSFET Models for SPICE Simulation

2001-02-21

this book describes new fuzzy logic based mathematical apparatus which enable readers to work with continuous variables while implementing whole circuit simulations with speed similar to gate level simulators and accuracy similar to circuit level simulators the author demonstrates newly developed principles of digital integrated circuit simulation and optimization that take into consideration various external and internal destabilizing factors influencing the operation of digital ics the discussion includes factors including radiation ambient temperature electromagnetic fields and climatic conditions as well as non ideality of interconnects and power rails

Nonsmooth Modeling and Simulation for Switched Circuits

2010-10-19

this text discusses simulation process for circuits including clamper voltage and current divider transformer modeling transistor as an amplifier transistor as a switch mosfet modeling rc and lc filters step and impulse response to rl and rc circuits amplitude modulator in a step by step manner for more clarity and understanding to the readers it covers electronic circuits like rectifiers rc filters transistor as an amplifier operational amplifiers pulse response to a series rc circuit time domain simulation with a triangular input signal and modulation in detail the text presents issues that occur in practical implementation of various electronic circuits and assist the readers in finding solutions to those issues using the software aimed at undergraduate graduate students and academic researchers in the areas including electrical and electronics and communications engineering this book discusses simulation of analog circuits and their behavior for different parameters covers ac dc circuit modeling using regular and parametric sweep methods the theory will be augmented with practical electrical circuit examples that will help readers to better understand the topic discusses circuits like rectifiers rc filters transistor as an amplifier and operational amplifiers in detail

Spice

1997

this book constitutes the refereed proceedings of the 15th international workshop on power and timing optimization and simulation patmos 2005 held in leuven belgium in september 2005 the 74 revised full papers presented were carefully reviewed and selected from numerous submissions the papers are organized in topical sections on low power processors code optimization for low power high level design telecommunications and signal processing low power circuits system on chip design busses and interconnections modeling design automation low power techniques memory and register files applications digital circuits and analog and physical design

Integrated Circuit and System Design. Power and Timing Modeling, Optimization and Simulation

2006-09-08

this research monograph deals with the design and analysis of integrated circuits and describes how on chip inductance can have a tangible effect on high speed integrated circuits ismail northwestern university and friedman university of rochester review basic transmission line theory methods for evaluating the transient response of linear networks and characterization of mos transistors they then introduce a closed form solution for the propagation delay of a cmos gate driving a lossy transmission line with a terminating cmos gate further discussion includes waveform characterization of signals at different nodes of an rlc tree dynamic and short circuit power of cmos gates driving lossless transmission lines and the direct truncation of the transfer function dtt method for evaluation of the transient response in rlc circuits c book news inc

Semiconductor Device Modeling with Spice

1998-12-22

this book provides a comprehensive review of the models and approaches that can be employed to simulate modular multilevel converters mmcs each solution is described in terms of operating principle fields of applicability advantages and limitations in addition this work proposes a novel and efficient simulation approach for mmcs based on sub circuit isomorphism this technique which has its roots in the electronics fields can be profitably exploited to simulate mmcs regardless of the model used to describe its sub modules including the most accurate ones lastly this book considers a well known high voltage direct current hvdc benchmark system consisting of two mmcs after describing the implementation details of each benchmark component simulation results in several scenarios ranging from normal operating conditions to faults in the ac and dc grid are included to validate the proposed approach and showcase its key features due to its educational content this book constitutes a useful guide for phd students and researchers interested in the topic of mmcs and their simulation it also serves as a starting platform for junior electrical engineers who work in the field of power electronic converters for hvdc systems

Simulation and Optimization of Digital Circuits

2018-04-12

this book describes algorithmic methods and parallelization techniques to design a parallel sparse direct solver which is specifically targeted at integrated circuit simulation problems the authors describe a complete flow and detailed parallel algorithms of the sparse direct solver they also show how to improve the performance by simple but effective numerical techniques the sparse direct solver techniques described can be applied to any spice like integrated circuit simulator and have been proven to be high performance in actual circuit simulation readers will benefit from the state of the art parallel integrated circuit simulation techniques described in this book especially the latest parallel sparse matrix solution techniques

Electronic Circuit Analysis using LTSpice XVII Simulator

2021-08-18

this book constitutes the refereed proceedings of the 19th international conference on embedded computer systems architectures modeling and simulation samos 2019 held in pythagorion samos greece in july 2019 the 21 regular papers presented were carefully reviewed and selected from 55 submissions the papers are organized in topical sections on system design space exploration deep learning optimization system security multi many core scheduling system energy and heat management many core communication and electronic system level design and verification in addition there are 13 papers from three special sessions which were organized on topics of current interest insights from negative results machine learning implementations and european projects

Integrated Circuit and System Design. Power and Timing Modeling, Optimization and Simulation

2005-09-06

this book gives a concise presentation of the fundamentals of electronics with applications mainly to biosciences it is thought that mechanical engineers computer scientists physicists chemical engineers and bio scientists students and graduates will benefit from studying the book as they will be helped to understand better the operation of the electronic equipment they use in their daily life at home and or at work it will also be useful to those who participate in multidisciplinary working teams which require use of electronic equipment in their research and development projects additionally it will be useful to teachers of electronics and corresponding students in non electronic engineering departments at technical colleges and universities no previous knowledge of electronics is assumed and the reader will be helped to comprehend the material by following the numerical examples and solving the problems using matlab and simulink programs

On-Chip Inductance in High Speed Integrated Circuits

2001-02-28

this book is the first in a series of three dedicated to advanced topics in mixed signal ic design methodologies it is one of the results achieved by the mixed signal design cluster an initiative launched in 1998 as part of the tardis project funded by the european commission within the esprit iv framework this initiative aims to promote the development of new design and test methodologies for mixed signal ics and to accelerate their adoption by industrial users as microelectronics evolves mixed signal techniques are gaining a significant importance due to the wide spread of applications where an analog front end is needed to drive a complex digital processing subsystem in this sense analog and mixed signal circuits are recognized as a bottleneck for the market acceptance of systems on chip because of the inherent difficulties involved in the design and test of these circuits specially problems arising from the use of a common substrate for analog and digital components are a main limiting factor the mixed signal cluster has been formed by a group of 11 research and development projects plus a specific action to promote the dissemination of design methodologies techniques and supporting tools developed within the cluster projects the whole action ending in july 2002 has been assigned an overall budget of more than 8 million euro

Modular Multilevel Converter Modelling and Simulation for HVDC Systems

2022-10-21

this book constitutes the refereed proceedings of the 22nd international conference on integrated circuit and system design patmos 2012 held in newcastle uk spain in september 2012 the 25 revised full papers presented were carefully reviewed and selected from numerous submissions the paper feature emerging challenges in methodologies and tools for the design of upcoming generations of integrated circuits and systems including reconfigurable hardware such as fpgas the technical program focus on timing performance and power consumption as well as architectural aspects with particular emphasis on modeling design characterization analysis and optimization

Parallel Sparse Direct Solver for Integrated Circuit Simulation

2017-02-11

every day companies call upon their signal integrity engineers to make difficult decisions about design constraints and timing margins can i move these wires closer together how many holes can i drill in this net how far apart can i place these chips each design is unique there s no single recipe that answers all the questions today s designs require ever greater precision but design guides for specific digital interfaces are by nature conservative now for the first time there s a complete guide to timing analysis and simulation that will help you manage the tradeoffs between signal integrity performance and cost writing from the perspective of a practicing si engineer and team lead greg edlund of ibm presents deep knowledge and quantitative techniques for making better decisions about digital interface design edlund shares his insights into how and why digital interfaces fail revealing how fundamental sources of pathological effects can combine to create fault conditions you won t just learn edlund s expert techniques for avoiding failures you ll learn how to develop the right approach for your own projects and environment coverage includes systematically ensure that interfaces will operate with positive timing margin over the product s lifetime without incurring excess cost understand essential chip to chip timing concepts in the context of signal integrity collect the right information upfront so you can analyze new designs more effectively review the circuits that store information in cmos state machines and how they fail learn how to time common clock source synchronous and high speed serial transfers thoroughly understand how interconnect electrical characteristics affect timing propagation delay impedance profile crosstalk resonances and frequency dependent loss model 3d discontinuities using electromagnetic field solvers walk through four case studies coupled differential vias land grid array connector ddr2 memory data transfer and pci express channel appendices present a refresher on spice modeling and a high level conceptual framework for electromagnetic field behavior objective realistic and practical this is the signal integrity resource engineers have been searching for preface xiii acknowledgments xvi about the author xix about the cover xx chapter 1 engineering reliable digital interfaces 1 chapter 2 chip to chip timing 13 chapter 3 inside io circuits 39 chapter 4 modeling 3d discontinuities 73 chapter 5 practical 3d examples 101 chapter 6 ddr2 case study 133 chapter 7 pci express case study 175 appendix a a short cmos and spice primer 209 appendix b a stroll through 3d fields 219 endnotes 233 index 235

Embedded Computer Systems: Architectures, Modeling, and Simulation

2019-08-09

a practical guide to analog behavioral modeling for ic system design presents a methodology for abstracting an ic system so that the designer can gain a macroscopic view of how sub systems interact as well as verify system functionality in various applications before committing to a design this will prevent problems that may be caused late in the design cycle by incompatibilities between the individual blocks that comprise the overall system this book will focus on the techniques of modelling ic systems through analog behavioral modeling and simulation it will investigate a practical approach by which designers can put together these systems to analyze topological and architectural issues to optimize ic system performance highlights discussions on modeling and simulation from spice to behavioral simulators comparison of various hardware description languages and a discussion on the effects of language standardization explanation on how to reduce time to market by decreasing design cycle time through modeling and simulation contains more than 25 building block examples that can be used to construct mixed signal ic system models analysis of 4 different ic systems using various levels of model detail this book is intended for the practicing engineer who would like to gain practical knowledge in applications of analog behavioral modelling for ic system design

BASIC ELECTRONICS FOR NON ELECTRICAL ENGINEERS (with MATLAB and Simulink Exercises)

2012-05-26

this book presents the art of advanced mosfet modeling for integrated circuit simulation and design it provides the essential mathematical and physical analyses of all the electrical mechanical and thermal effects in mos transistors relevant to the operation of integrated circuits particular emphasis is placed on how the bsim model evolved into the first ever industry standard spice mosfet model for circuit simulation and cmos technology development the discussion covers the theory and methodology of how a mosfet model or semiconductor device models in general can be implemented to be robust and efficient turning device physics theory into a production worthy spice simulation model special attention is paid to mosfet characterization and model parameter extraction methodologies making the book particularly useful for those interested or already engaged in work in the areas of semiconductor devices compact modeling for spice simulation and integrated circuit design

Substrate Noise Coupling in Mixed-Signal ASICs

2006-05-31

Integrated Circuit and System Design. Power and Timing Modeling, Optimization and Simulation

2013-01-03

Timing Analysis and Simulation for Signal Integrity Engineers

2007-10-22

A Practical Guide to Analog Behavioral Modeling for IC System Design

2012-11-14

BSIM4 and MOSFET Modeling for IC Simulation

2011