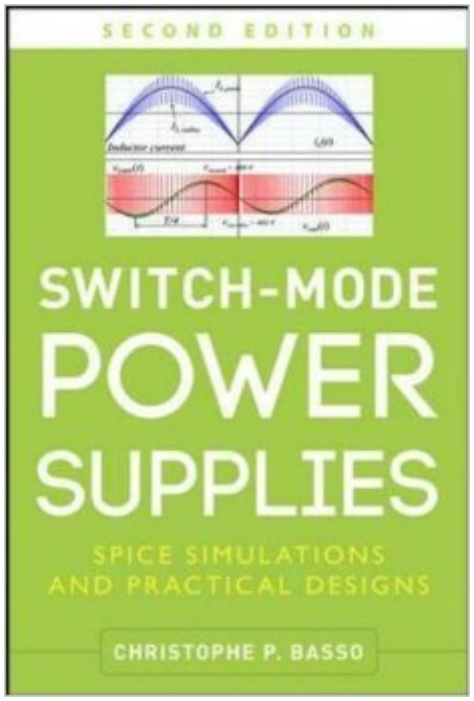
Switch-Mode Power Supplies, Second Edition: SPICE Simulations And Practical Designs



Synopsis

THE LATEST SPICE SIMULATION AND DESIGN TOOLS FOR CREATING STATE-OF-THE-ART SWITCHING 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, hands-on 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

Book Information

Hardcover: 992 pages

Publisher: McGraw-Hill Education; 2 edition (August 18, 2014)

Language: English

ISBN-10: 0071823468

ISBN-13: 978-0071823463

Product Dimensions: 7.5 x 1.6 x 9.5 inches

Shipping Weight: 3.6 pounds (View shipping rates and policies)

Average Customer Review: 4.4 out of 5 starsÂ Â See all reviewsÂ (10 customer reviews)

Best Sellers Rank: #672,687 in Books (See Top 100 in Books) #96 inÂ Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Integrated #112 inÂ Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Semiconductors #202 inÂ Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Design

Customer Reviews

Well my heavily used first edition copy of this book has now been happily replaced by this wonderful state-of-the-art second edition update. The first edition book has served me so well as one of the most helpful reference collection books to allow me to bridge between theory and actual practice. Now arrives the second edition with corrections, updates and additions that seek to make this tool even more helpful. Has it delivered? Oh yes! The first big improvement is its size. It is slightly taller but significantly wider, which has allowed for a great improvement in formatting. The flow of reading the second edition is fantastic. Where needed mathematical details have been elaborated and are clearer and easier to understand. New additions to switching topologies have been added to the already vast collection.A subject of this complexity and variability is not easy to distill in a manner which can be easily understood, digested and made practical for the modern day student or established engineer who wishes to design and simulate power converters using SPICE. Mr. Basso very eloquently and most thoroughly covers a huge swath of switch-mode topologies that is easy to understand for both students entering into power conversion and practicing engineers who need a refresher. I have tried other books, either they are over the top theoretical with long drawn out mathematics that leave one hanging in limbo between theory and reality, or they are general and provide very few tools on how to "do it yourself". As a prerequisite to following this book you will need an understanding of algebra, calculus and basic SPICE simulation skills. The book provides you with a link to download many of the SPICE and MathCAD example files in the book as well as demo simulation software.

Programming with Greenfoot: Object-Oriented Programming in Java with Games and Simulations (2nd Edition) Basic Pharmacokinetics and Pharmacodynamics: An Integrated Textbook and Computer Simulations Numerical Techniques for Direct and Large-Eddy Simulations (Chapman & Hall/CRC Numerical Analysis and Scientific Computing Series) Molecular Bioenergetics: Simulations of Electron, Proton, and Energy Transfer (ACS Symposium Series) Dynamic Simulations of Electric Machinery: Using MATLAB/SIMULINK Modeling Nature: Cellular Automata Simulations with MathematicaÂ® (Sciences; 77) Cisco Routers for the Desperate: Router and Switch Management, the Easy Way Swapped And Expecting: Taboo Forbidden Gender Swap Male To Female Fertile Switch Erotica The Big Switch: Rewiring the World, from Edison to Google Your Appetite Switch: Master Your Eating & Free Your Life