

Smps Circuit Diagram Using Uc3842

Take the "black magic" out of switching power supplies with Practical Switching Power Supply Design! This is a comprehensive "hands-on" guide to the theory behind, and design of, PWM and resonant switching supplies. You'll find information on switching supply operation and selecting an appropriate topology for your application. There's extensive coverage of buck, boost, flyback, push-pull, half bridge, and full bridge regulator circuits. Special attention is given to semiconductors used in switching supplies. RFI/EMI reduction, grounding, testing, and safety standards are also detailed. Numerous design examples and equations are given and discussed. Even if your primary expertise is in logic or microprocessor engineering, you'll be able to design a power supply that's right for your application with this essential guide and reference! Gives special attention to resonant switching power supplies, a state-of-the-art trend in switching power supply design Approaches switching power supplies in an organized way beginning with the advantages of switching supplies and thier basic operating principles Explores various configurations of pulse width modulated (PWM) switching supplies and gives readers ideas for the direction of their designs Especially useful for practicing design engineers whose primary specialty is not in analog or power engineering fields Chapter 1: The Principles of Switching Power Conversion Chapter 2: DC-DC Converter Design and Magnetics Chapter 3: Off-line Converter Design and Magnetics Chapter 4: The Topology FAQ Chapter 5: Optimal Core Selection Chapter 6: Component Ratings, Stresses, Reliability and Life Chapter 7: Optimal Power Components Selection Chapter 8: Conduction and Switching Losses Chapter 9: Discovering New Topologies Chapter 10: Printed Circuit Board Layout Chapter 11: Thermal Management Chapter 12: Feedback Loop Analysis and Stability Chapter 13: Paralleling, Interleaving and Sharing Chapter 14: The Front-End of AC-DC Power Supplies Chapter 15: DM and CM Noise in Switching Power Supplies Chapter 16: Fixing EMI across the Board Chapter 17: Input Capacitor and Stability Chapter 18: The Math behind the Electromagnetic Puzzle Chapter 19: Solved Examples Appendix A.

This book provides a survey of the state of the art of technology and future trends in the new family of Smart Power ICs and describes design and applications in a variety of fields ranging from automotive to telecommunications, reliability evaluation and qualification procedures. The book is a valuable source of information and reference for both power IC design specialists and to all those concerned with applications, the development of digital circuits and with system architecture.

Loop control is an essential area of electronics engineering that today's professionals need to master. Rather than delving into extensive theory, this practical book focuses on what you really need to know for compensating or stabilizing a given control system. You can turn instantly to practical sections with numerous design examples and ready-made formulas to help you with your projects in the field. You also find coverage of the underpinnings and principles of control loops so you can gain a more complete understanding of the material. This authoritative volume explains how to conduct analysis of control systems and provides extensive details on practical compensators. It helps you measure your system, showing how to verify if a prototype is stable and features enough design margin. Moreover, you learn how to secure high-volume production by bench-verified safety margins.

Oscillator Circuits

Data Book

Robust Control in Power Systems

BiCMOS Bus Interface Logic

Power supplies and amplifiers

Safety Produce Informatization is become the frontier with industrial development, the objective of IICSPI2018 is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Safety Produce and Informatization This conference provides opportunities for the delegates to exchange new ideas and application experiences face to face, to establish business or research relations and to find global partners for future collaboration The main topics included but no limited Safety engineering and informatization Production safety and artificial intelligence Big data technology on safety production Computing Science Safety production and the Internet of Things Measurement and control technology Network security

Using this book as a guide, Pressman promises, even a novice can immediately design a complete switching power supply circuit. No other book has such complete instruction in one volume. Using a tutorial, how-to approach, Pressman covers every aspect of this new technology, including circuit and transformer design, using higher switching frequencies, new topologies, and integrated PWM chips. For this latest edition, Pressman has added in-depth discussion of power factor correction, high-frequency ballasts for fluorescent lamps, and low-input voltage power supplies for laptop computers.

A thoroughly revised third edition of this widely praised, bestselling textbook presents a comprehensive systems-level perspective of electric and hybrid vehicles with emphasis on technical aspects, mathematical relationships and basic design guidelines. The emerging technologies of electric vehicles require the dedication of current and future engineers, so the target audience for the book is the young professionals and students in engineering eager to learn about the area. The book is concise and clear, its mathematics are kept to a necessary minimum and it contains a well-balanced set of contents of the complex technology. Engineers of multiple disciplines can either get a broader overview or explore in depth a particular aspect of electric or hybrid vehicles. Additions in the third edition include simulation-based design analysis of electric and hybrid vehicles and their powertrain components, particularly that of traction inverters, electric machines and motor drives. The technology trends to incorporate wide bandgap power electronics and reduced rare-earth permanent magnet electric machines in the powertrain components have been highlighted. Charging stations are a critical component for the electric vehicle infrastructure, and hence, a chapter on vehicle interactions with the power grid has been added. Autonomous driving is another emerging technology, and a chapter is included describing the autonomous driving system architecture and the hardware and software needs for such systems. The platform has been set in this book for system-level simulations to develop models using various softwares used in academia and industry, such as MATLAB®/Simulink, PLECS, PSIM, Motor-CAD and Altair Flux. Examples and simulation results are provided in this edition using these software tools. The third edition is a timely revision and contribution to the field of electric vehicles that has reached recently notable markets in a more and more environmentally sensitive world.

Newnes has worked with Marty Brown, a leader in the field of power design to select the very best design-specific material from the Newnes portfolio. Marty selected material for its timelessness, its relevance to current power supply design needs, and its real-world approach to design issues. Special attention is given to switching power supplies and their design issues, including component selection, minimization of EMI, toroid selection, and breadboarding of designs. Emphasis is also placed on design strategies for power supplies, including case histories and design examples.

This is a book that belongs on the workbench of every power supply designer! *Marty Brown, author and power supply design consultant, has personally selected all content for its relevance and usefulness *Covers best design practices for switching power supplies and power converters *Emphasis is on pragmatic solutions to commonly encountered design problems and tasks

Fundamentals of Power Supply Design

Smart Power ICs

Design and Applications, Third Edition

Handbook of Automotive Power Electronics and Motor Drives

Designing Control Loops for Linear and Switching Power Supplies

Transfer Functions of Switching Converters teaches readers how to determine transfer functions of switching power supplies commonly encountered in consumer and industrial markets. The book starts with a smooth introduction to switching cells, going into the details of the first steps of linearization and small-signal modulation. You will then learn how the PWM switch model was derived and how to apply it to the basic structures operated in fixed switching frequency and various operating conditions like continuous and discontinuous modes in voltage- or current-mode control. The model is extended to other control schemes like quasi-resonance, constant on- and off-time converters, all with an associated small-signal version. The following chapters explore the founding structures like the buck, the boost and buck-boost cells, later covering their isolated versions like forward or flyback converters. The last chapter deals with more complicated structures like π , Zeta, SEPIC and LLC.

Power Supplies for LED Driving, Second Edition explores the wide use of light-emitting diodes due to their efficient use of power. The applications for power LEDs include traffic lights, street lamps, automotive lighting, architectural lights, theatre lighting, household light replacements, signage lighting (replacing neon strip lights and fluorescent tubes), LCD display backlighting, and many more. Powering (driving) these LED's is not always simple. Linear driving is inefficient and generates far too much heat. With a switching supply, the main issues are EMI, efficiency, and of course cost. This book covers the design trade-offs involved in LED driving applications, from low-power, to UB-LEDs and beyond. Provides a practical, hands-on approach to power supply design for LED drivers Contains detailed examples of what works throughout the design process Presents commentary on how the calculated component value compares with the actual value used, including a description of why the choice was made

Robust Control in Power Systems deals with the applications of new techniques in linear system theory to control low frequency oscillations in power systems. The book specifically focuses on the analysis and damping of inter-area oscillations in the systems which are in the range of 0.2–1 Hz. The damping control action is injected through high power electronic devices known as flexible AC transmission system (FACTS) controllers. Three commonly used FACTS controllers: controllable series capacitors (CSCs) controllable phase shifters (CPSs) and static var compensators (SVCs) have been used in this book to control the inter-area oscillations. The overview of linear system theory from the perspective of power system control is explained through examples. The damping control design is formulated as norm optimization problem. The H_{∞} , H_2 norm of properly defined transfer functions are minimized in linear matrix inequalities (LMI) framework to obtain desired performance and stability robustness. Both centralized and decentralized control structures are used. Usually the transmission of feedback signal from a remote location encounters delays making it difficult to control the system. Smith predictor based approach has been successfully explored in this book as a solution to such a problem. Robust Control in Power Systems will be valuable to academicians in the areas of power, control and system theory, as well as professionals in the power industry.

Synchronous motors are indubitably the most effective device to drive industrial production systems and robots with precision and rapidity. Their control law is thus critical for combining at the same time high productivity to reduced energy consumption. As far as possible, the control algorithms must exploit the properties of these actuators. Therefore, this work draws on well adapted models resulting from the Park's transformation, for both the most traditional machines with sinusoidal field distribution and for machines with non-sinusoidal field distribution which are more and more used in industry. Both, conventional control strategies like vector control (either in the synchronous reference frame or in the rotor frame) and advanced control theories like direct control and predictive control are thoroughly presented. In this context, a significant place is reserved to sensorless control which is an important and critical issue in tomorrow's motors.

Power Supplies, Switching Regulators, Inverters, and Converters

Slowly Sudden

Troubleshooting Analog Circuits

Practical Switching Power Supply Design

A Tutorial Guide

* Describes the operation of each circuit in detail * Examines a wide selection of external components that modify the IC package characteristics * Provides hands-on, essential information for designing a switching power supply Simplified Design of Switching Power Supplies is an all-inclusive, one-stop guide to switching power-supply design. Step-by-step instructions and diagrams render this book essential for the student and the experimenter, as well as the design professional. Simplified Design of Switching Power Supplies concentrates on the use of IC regulators. All popular forms of switching supplies, including DC-DC converters, inverters, buck, boost, buck-boost, pulse frequency modulation, pulse width modulation, current-mode control and pulse skipping, are described in detail. The design examples may be put to immediate use or may be modified to meet a specific design goal. As an instructional text for those unfamiliar with switching supplies, or as a reference for those in need of a refresher, this unique book is essential for those involved in switching power-supply design.

The dinner with Emma was a gift after the tense period in Budapest. While eating, I looked at her face as she was talking, animated, relaxed, laughing, with short periods of seriousness. I wished I could take pictures in those moments, moments that I had missed, moments that I usually miss. I often thought about my pictures, what sort of photographer was I? A portrait photographer? A journalist? In that moment, thinking of taking pictures of her while she was eating, of the way she closed her eyes with each bite, and laughed under the calming light in the room, I considered myself a photographer of moods. Mark works in a current affairs magazine as a photographer. He spends his time bickering and philosophising with his friends. Young to middle aged, Mark and his friends pass their moments avoiding commitments, shunning what goes on around them. There are times to make decisions often made through no action. Responsibilities dissolve in comfort, and emotions seem to be foreign phenomena in their life under illusion of personal liberty. Can this all change?

Use of rectifiers. Use of high voltage switching transistors. Programmable unijunction transistors. Inverter/converter systems. Switching mode power supplies. Touch switch power control. Psychedelic lights control. Microprocessors. A schottky TTL microcomputer. use of programmable read only memories. Reference mark generator for automated equipment. A universal asynchronous receiver transmitter. Binary and decimal rate multipliers. Peripheral circuits. Display and counting circuits. Integrated injection logic.

Provides designers with quick reference guides to various types of circuits; comes with 250-300 ready-to-use designs, with schematics and explanations.

Amplifier Circuits

Transfer Functions of Switching Converters

Simplified Design of Switching Power Supplies

Switchmode Power Supply Handbook

Fred the Clown

An all-in-one guide to design, applications, and operation—with hundreds of helpful schematics and diagrams. Updated to cover new IC technology, low-voltage logic devices, and one-watt power supplies for ISDN equipment. Detailed enough for professional engineers and technicians. . . . accessible enough for students and hobbyists.

This publication is a compilation of papers presented at the Semiconductor Device Reliability Workshop sponsored by the NATO International Scientific Exchange Program. The Workshop was held in Crete, Greece from June 4 to June 9, 1989. The objective of the Workshop was to review and to further explore advances in the field of semiconductor reliability through invited paper presentations and discussions. The technical emphasis was on quality assurance and reliability of optoelectronic and high speed semiconductor devices. The primary support for the meeting was provided by the Scientific Affairs Division of NATO. We are indebted to NATO for their support and to Dr. Craig Sinclair, who admin isters this program. The chapters of this book follow the format and order of the sessions of the meeting. Thirty-six papers were presented and discussed during the five-day Workshop. In addition, two panel sessions were held, with audience participation, where the particularly controversial topics of burn-in and reliability modeling and prediction methods were discussed. A brief review of these sessions is presented in this book.

Switched Mode Power SuppliesDesign and ConstructionJohn Wiley & Sons Incorporated

Describes the complete performance details of solid state devices of the thyristor group including GTOs and transistor family along with problems and solutions associated with their operation. Presents both theoretical and mathematical aspects of all types of thyristor converters, stipulating the thermal design for their effective utilization plus mathematical analysis. Contains a variety of numerical examples, scores of worked examples, review and multiple choice questions.

Electric and Hybrid Vehicles

Power Electronics

2018 IEEE International Conference of Safety Produce Informatization (IICSPI)

Switchmode Power Supply Handbook 3/E

The signature creation of cartoonist Roger Langridge, Fred the Clown is the thinking man's idiot. Fred has an eye for the ladies, as well as several other organs, but the only part of themselves they're willing to share with him is a carefully placed kneecap. Fred the Clown's misadventures are a curious balance of bleakness and joyful absurdism; the universe may dump on Fred from a great height, but he never gives up. More often than not, they involve the pursuit of a lady—any lady will do, it seems, but bearded ladies are at the top of the list. Disappointment seems inevitable, and it usually is; yet, almost despite himself, Langridge will occasionally give Fred a happy ending out of nowhere... p.p1 {margin: 0.0px 0.0px 0.0px 0.0px; font: 13.9px Arial; color: #424242}

The SCR has grown to be the most prominent semiconductor device for static power conversion and control.

Troubleshooting Analog Circuits is a guidebook for solving product or process related problems in analog circuits. The book also provides advice in selecting equipment, preventing problems, and general tips. The coverage of the book includes the philosophy of troubleshooting; the modes of failure of various components; and preventive measures. The text also deals with the active components of

analog circuits, including diodes and rectifiers, optically coupled devices, solar cells, and batteries. The book will be of great use to both students and practitioners of electronics engineering. Other professionals dealing with electronics will also benefit from the text, such as electric technicians.

Whether you are a student, a newly-minted engineer entering the field of power electronics, a salesperson needing to understand a customer's needs, or a seasoned power supply designer desiring to track down a forgotten equation, this book will be a significant aid. Beginning with the basic definition of a power supply, we will traverse through voltage regulation techniques and the components necessary for their implementation, and then move on to the myriad of circuit topologies and control algorithms prevalent in modern-day design solutions. Separate chapters on feedback-loop compensation and magnetic design principles will build on this foundation, along with in-depth descriptions for dealing with regulations for electromagnetic compatibly, human safety, and energy efficiency issues. Additional chapters will describe the value proposition for digital control and the practical aspects power supply construction.

Optimal Design of Switching Power Supply

Switching Power Supply Design, 3rd Ed.

Switching and Linear Power Supply, Power Converter Design

Permanent Magnet Motor Technology

Switching Power Supplies A to Z

Unarguably the leading hands-on guide in this rapidly expanding area of electronics, Keith Billings' new revision of his Switchmode Power Supply Handbook brings state-of-the-art techniques and developments to engineers at all levels. Offering sound working knowledge of the latest in topologies and clear, step-by-step approaches to component decisions, this Handbook gives power supply designers practical, solutions-oriented design guidance free of unnecessarily complicated mathematical derivations and theory. This thoroughly updated Handbook features many new fully worked examples, as well as numerous nomograms--everything you need to design today's smaller, faster, and cooler systems. Turn to just about any page, and you'll find cutting-edge design expertise on electronic ballast, power factor correction, new thermal management techniques, transformers, chokes, input filters, EMI control, converters, snubber circuits, auxiliary systems, and much more. The most comprehensive book on power supply design available anywhere, Switchmode Power Supply Handbook is the industry standard, now fully updated for the 21st century.

Initially, the only electric loads encountered in an automobile were for lighting and the starter motor. Today, demands on performance, safety, emissions, comfort, convenience, entertainment, and communications have seen the working-in of seemingly innumerable advanced electronic devices. Consequently, vehicle electric systems require larger capacities and more complex configurations to deal with these demands. Covering applications in conventional, hybrid-electric, and electric vehicles, the Handbook of Automotive Power Electronics and Motor Drives provides a comprehensive reference for automotive electrical systems. This authoritative handbook features contributions from an outstanding international panel of experts from industry and academia, highlighting existing and emerging technologies. Divided into five parts, the Handbook of Automotive Power Electronics and Motor Drives offers an overview of automotive power systems, discusses semiconductor devices, sensors, and other components, explains different power electronic converters, examines electric machines and associated drives, and details various advanced electrical loads as well as battery technology for automobile applications. As we seek to answer the call for safer, more efficient, and lower-emission vehicles from regulators and consumer insistence on better performance, comfort, and entertainment, the technologies outlined in this book are vital for engineering advanced vehicles that will satisfy these criteria.

This series of circuits provides designers with a quick source for oscillator circuits. Why waste time paging through huge encyclopedias when you can choose the topic you need and select any of the specialized circuits sorted by application? This book in the series has 250-300 practical, ready-to-use circuit designs, with schematics and brief explanations of circuit operation. The original source for each circuit is listed in an appendix, making it easy to obtain additional information. Ready-to-use circuits Grouped by application for easy look-up Circuit source listings

Power Supply Cookbook, Second Edition provides an easy-to-follow, step-by-step design framework for a wide variety of power supplies. With this book, anyone with a basic knowledge of electronics can create a very complicated power supply design in less than one day. With the common industry design approaches presented in each section, this unique book allows the reader to design linear, switching, and quasi-resonant switching power supplies in an organized fashion. Formerly complicated design topics such as magnetics, feedback loop compensation design, and EMI/RFI control are all described in simple language and design steps. This book also details easy-to-modify design examples that provide the reader with a design template useful for creating a variety of power supplies. This newly revised edition is a practical, "start-to-finish" design reference. It is organized to allow both seasoned and inexperienced engineers to quickly find and apply the information they need. Features of the new edition include updated information on the design of the output stages, selecting the controller IC, and other functions associated with power supplies, such as: switching power supply control, synchronization of the power supply to an external source, input low voltage inhibitors, loss of power signals, output voltage shut-down, major current loops, and paralleling filter capacitors. It also offers coverage of waveshaping techniques, major loss reduction techniques, snubbers, and quasi-resonant converters. Guides engineers through a step-by-step design framework for a wide variety of power supplies, many of which can be designed in less than one day Provides easy-to-understand information about often complicated topics, making power supply design a much more accessible and enjoyable process

The TTL Data Book

Microprocessors and Microcomputers and Switching Mode Power Supplies

Switched Mode Power Supplies

Technologies and Applications

Design and Construction

A contemporary evaluation of switching power design methods with real world applications • Written by a leading author renowned in his field • Focuses on switching power supply design, manufacture and debugging • Switching power supplies have relevance for contemporary applications including mobile phone chargers, laptops and PCs • Based on the authors' successful "Switching Power Optimized Design 2nd Edition" (in Chinese) • Highly illustrated with design examples of real world applications

The definitive guide to switchmode power supply design--fully updated Covering the latest developments and techniques, Switchmode Power Supply Handbook, third edition is a thorough revision of the industry-leading resource for power supply designers. New design methods required for powering small, high-performance electronic devices are presented. Based on the authors' decades of experience, the book is filled with real-world solutions and many nomograms, and features simplified theory and mathematical analysis. This comprehensive volume explains common requirements for direct operation from the AC line supply and discusses design, theory, and practice. Engineering requirements of switchmode systems and recommendations for active power factor correction are included. This practical guide provides you with a working knowledge of the latest topologies along with step-by-step approaches to component decisions to achieve reliable and cost-effective power supply designs. Switchmode Power Supply Handbook, third edition covers: Functional requirements of direct off-line switchmode power supplies Power components selection and transformer designs for converter circuits Transformer, choke, and thermal design Input filters, RFI control, snubber circuits, and auxiliary systems Active power factor correction system design Worked examples of would components Examples of fully resonant and quasi-resonant systems A resonant inverter fluorescent ballast An example of high-power phase shift modulated system A new MOSFET resonant inverter drive scheme A single-control, wide-range wave oscillator

The importance of permanent magnet (PM) motor technology and its impact on electromechanical drives has grown exponentially since the publication of the bestselling second edition. The PM brushless motor market has grown considerably faster than the overall motion control market. This rapid growth makes it essential for electrical and electromechanical engineers and students to stay up-to-date on developments in modern electrical motors and drives, including their control, simulation, and CAD. Reflecting innovations in the development of PM motors for electromechanical drives, Permanent Magnet Motor Technology: Design and Applications, Third Edition demonstrates the construction of PM motor drives and supplies ready-to-implement solutions to common roadblocks along the way. This edition supplies fundamental equations and calculations for determining and evaluating system performance, efficiency, reliability, and cost. It explores modern computer-aided design of PM motors, including the finite element approach, and explains how to select PM motors to meet the specific requirements of electrical drives. The numerous examples, models, and diagrams provided in each chapter facilitate a lucid understanding of motor operations and characteristics. This 3rd edition of a bestselling reference has been thoroughly revised to include: Chapters on high speed motors and micromotors Advances in permanent magnet motor technology Additional numerical examples and illustrations An increased effort to bridge the gap between theory and industrial applications Modified research results The growing global trend toward energy conservation makes it quite possible that the era of the PM brushless motor drive is just around the corner. This reference book will give engineers, researchers, and graduate-level students the comprehensive understanding required to develop the breakthroughs that will push this exciting technology to the forefront.

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The Voltage Regulator Handbook

Switch-mode Power Supply SPICE Cookbook

Design Fundamentals

SCR Manual

Power Sources and Supplies: World Class Designs

The World's #1 Guide to Power Supply Design Now Updated! Recognized worldwide as the definitive guide to power supply design for over 25 years, Switching Power Supply Design has been updated to cover the latest innovations in technology, materials, and components. This Third Edition presents the basic principles of the most commonly used topologies, providing you with the essential information required to design cutting-edge power supplies. Using a tutorial, how-and-why approach, this expert resource is filled with design examples, equations, and charts. The Third Edition of Switching Power Supply Design features: Designs for many of the most useful switching power supply topologies The core principles required to solve day-to-day design problems A strong focus on the essential basics of transformer and magnetics design New to this edition: a full chapter on choke design and optimum drive conditions for modern fast IGBTs Get Everything You Need to Design a Complete Switching Power Supply: Fundamental Switching Regulators * Push-Pull and Forward Converter Topologies * Half- and Full-Bridge Converter Topologies * Flyback Converter Topologies * Current-Mode and Current-Fed Topologies * Miscellaneous Topologies * Transformer and Magnetics Design * High-Frequency Choke Design * Optimum Drive Conditions for Bipolar Power Transistors, MOSFETs, Power Transistors, and IGBTs * Drive Circuits for Magnetic Amplifiers * Postregulators * Turn-on, Turn-off Switching Losses and Low Loss Snubbers * Feedback-Loop Stabilization * Resonant Converter Waveforms * Power Factor and Power Factor Correction * High-Frequency Power Sources for Fluorescent Lamps, and Low-Input-Voltage Regulators for Laptop Computers and Portable Equipment

Switched mode power supplies are now established as an industry standard method of providing power to many types of electronic equipment. This book provides thorough, up-to-date coverage of all aspects of switched mode power supply technology. Covers the full range of topics associated with the successful design and production of a switched mode power supply. -- Provides a sound, rigorous treatment of the theory, as well as practical applications, to allow the reader to achieve a suitable design and functionally satisfactory switched mode power supply. -- Considerably expanded since the first edition. The second edition includes coverage of electromagnetic compatibility, the main statutory regulations associated with switched mode power supply production, and validated simulation programs.

Ready-made SPICE power supply solutions Now you can get solutions to the most difficult problems facing power supply designers: shrinking size and increased thermal constraints. Christophe Basso's SMPS SPICE Cookbook is a complete designer's toolkit with tested, ready-to-run SPICE models on an accompanying CD-ROM. The models come in all three SPICE flavors with demo versions. You can start from scratch, installing the software and simulating the examples in the book without any SPICE experience whatsoever. All the common SMPS topologies are covered: buck, boost, buck-boost, and SEPIC. Each is described in terms of relative strengths and weaknesses and then modeled. Just turn to the CD, pull out the model in the flavor of SPICE you use, plug in your own values and out comes a design solution. All the models in the book have been carefully simulated and tested. A special website even lets you access new models that will be posted on a continuing basis

Technology from the Unitrode/Texas Instruments Power Supply Design Seminars

Power Supply Cookbook

Encyclopedia of Electronic Circuits, Volume 7

Power Supplies for LED Driving

Switching Power Supply Design