

Power Supply Cookbook

DATASHEETS
558-084

Second Edition

Marty Brown

Founder and president of the energy consulting firm Sierra Energy Management Systems LLC. His experience in electronics includes design work with underwater acoustics, avionics, satellite CODECs, process control, microcontroller architecture, and semiconductor applications.

EDN SERIES FOR DESIGN ENGINEERS

- 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.

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.

CONTENTS: Power System Organization, Power Supply Technology, Power Supply Design, Basic Linear Regulator Operation, Elementary Discrete Linear Regulator Designs, 3-Terminal Regulator Designs, Fundamentals of PWM Switching Power Supplies, Generalized Design Flow of Magnetic Elements, Rectification and Filtering, Synchronous Rectifiers, The Power MOSFET, Laying Out the Printed Circuit Board, PWM Switching Power Supply Design Examples, Fundamentals of Quasi-Resonant Operation, Uses of Resonant Techniques within Switching Power Supplies, Major Parasitic Influences within High Frequency Switching Power Supplies, Efficiency and EMI Performance of a Switching Power Supply (including traditional areas of significant loss, zero voltage and zero current transition switching techniques, Lossless passive snubbing, minimizing losses in the magnetics), and related Appendices

READERSHIP: Circuit design engineers, engineering technicians, students.

ISBN 075067329X : 336pp : 180 : Paperback : May 2001 : £24.99

