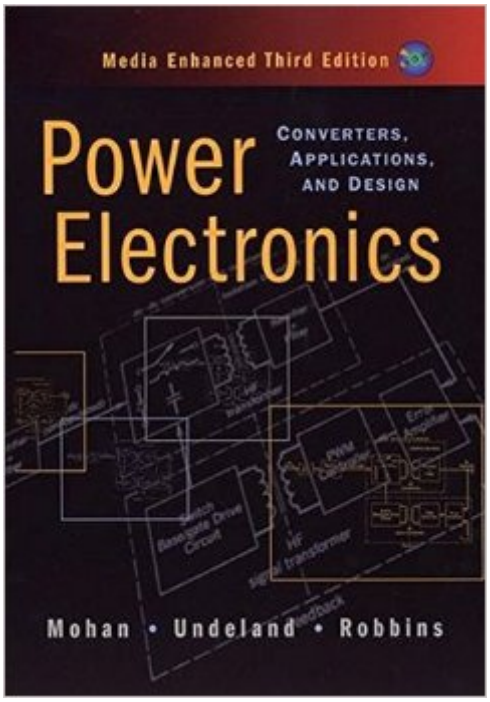
Power Electronics: Converters, Applications, And Design



Synopsis

Offering step-by-step, in-depth coverage, the new Third Edition of Power Electronics: Converters, Applications, and Design provides a cohesive presentation of power electronics fundamentals for applications and design in the power range of 500 kW or less. The text describes a variety of practical and emerging power electronic converters made feasible by the new generation of power semiconductor devices. The new edition is now enhanced with a new CD-ROM, complete with PSpice-based examples, a new magnetics design program, and PowerPoint slides.

Book Information

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Average Customer Review: 4.0 out of 5 starsÂ Â See all reviewsÂ (21 customer reviews)

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Customer Reviews

This is a great survey of power electronics for someone with a modest electrical engineering background. It presents terminology, hardware, circuits and analysis in an approachable and well organized way. After reading it, someone with little prior experience can have a clear sense of what the field is about, what devices are available, and what technology is appropriate for specific power and voltage levels.That said, as another reviewer pointed out, the book is a little light on math and detailed circuit topology. Erickson and Maksimovic was a much better fit for my needs.

This book covers a lot of material related to power electronics, but does not go into much detail. The topics include AC-to-DC, DC-to-DC, and DC-to-AC conversion, ZVS/ZCS schemes, lots of information related to devices (MOSFET and diode physics) and magnetics, and motor drive and utility applications. The material on AC-to-DC conversion, DC-to-AC conversion, motor drive

applications, and utility drive applications is not covered in a typical graduate level course. Based on this it would have been beneficial to go into more detail on isolated and non-isolated DC-to-DC converters by including more waveforms, discussing alternate forms of a given topology (for example the Cuk converter with and without a coupling inductor), discuss state space averaging in more detail (the line-to-output relationship was neglected), and include Vorperian's circuit model for the PWM switch. Overall this is a reasonable book, but I believe that Erickson's book is much better (Fundamentals of Power Electronics).

Great book. Excellent breakdown and explanations. If a mechanical engineer can understand it electrical engineers should have no problem. My only for not giving 5 stars is that it would have been better if it included more on pulse width modulation (PWM).

Although a little light on full converter schematics, this textbook contained excellent descriptions of converter building blocks and semiconductor device physics. It is excellent that it came with a simulator program too.

This book is the best power electronics book in terms of fundementals. However there are other books which can be more detailed in mathematics or circuit types. An engineer who is specialised in power electronics needs to know what the author provide in this book. As a result read this book as much as you can and revisit it when you need to fresh your knowledge.

Not a great book. Depending on the circuit, there may be two ways it can operate. In detail, it will show you how to solve it for one way but the other way it leaves you hanging. There has to be a better book.

Excellent book, discusses the basic Componenet power electronics, as well as the most common circuits and applications. Harmonic analyzes are shown. I highly recommend it

Great tool for future engineers

Design (Icp Primers in Electronics and Computer Science) Power Training: For Combat, MMA, Boxing, Wrestling, Martial Arts, and Self-Defense: How to Develop Knockout Punching Power, Kicking Power, Grappling Power, and Ground Fighting Power Mosfet Modeling for VLSI Simulation: Theory And Practice (International Series on Advances in Solid State Electronics) (International Series on Advances in Solid State Electronics and Technology) The Physics And Modeling of Mosfets (International Series on Advances in Solid State Electronics) (International Series on Advances in Solid State Electronics and Technology (Unnumbered)) All-in-One Electronics Guide: Your complete ultimate guide to understanding and utilizing electronics! Teach Yourself Electricity and Electronics, 5th Edition (Teach Yourself Electricity & Electronics) Grid Integration and Dynamic Impact of Wind Energy (Power Electronics and Power Systems) Solar PV Off-Grid Power: How to Build Solar PV Energy Systems for Stand Alone LED Lighting, Cameras, Electronics, Communication, and Remote Site Home Power Systems Engineering IT-Enabled Sustainable Electricity Services: The Tale of Two Low-Cost Green Azores Islands (Power Electronics and Power Systems) Switched Reluctance Motor Drives: Modeling, Simulation, Analysis, Design, and Applications (Industrial Electronics) Power Integrity for I/O Interfaces: With Signal Integrity/ Power Integrity Co-Design (Prentice Hall Modern Semiconductor Design) Feng Shui: Wellness and Peace-Interior Design, Home Decorating and Home Design (peace, home design, feng shui, home, design, home decor, prosperity) Digital Electronics: Principles and Applications Electronics: Principles and Applications with MultiSIM CD-ROM Principles of Electric Machines and Power Electronics, Second Edition Elements of Power Electronics (The Oxford Series in Electrical and Computer Engineering) Fundamentals of Power Electronics