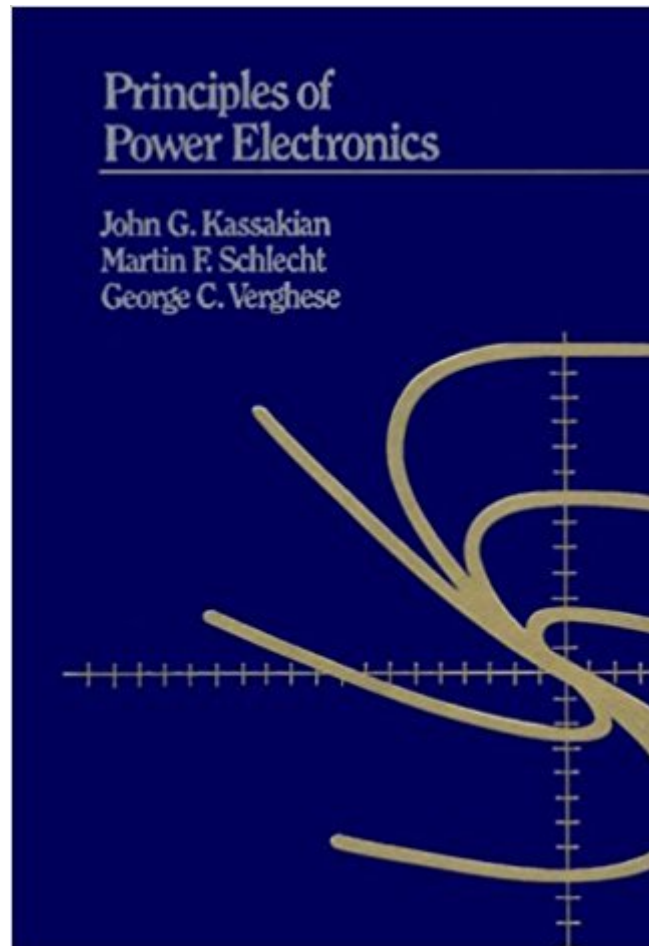




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# Principles Of Power Electronics



## Synopsis

This textbook offers coverage of the subject of power electronics.

## Book Information

Paperback: 740 pages

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## Customer Reviews

I am very happy with the contents of this book. The text is very readable, the examples are good, and the problems seem to be well constructed. I have two items that I would have liked to see different on this book. First is that the book is paperback (there doesn't appear to be a hardcover version.) The book is pretty thick, and the binding is already starting to show signs of failing in places. The second point, which is more minor, is that there are no answers any of the problems (i.e. odd answers in the back) which can be frustrating when trying to do some independent learning from the text. Overall, I'm happy with this book for its contents.

The contents of this book is good enough for me. But the book is different from the image and a little weak to use.

Power electronics is the technology associated with the efficient conversion, control and conditioning of electric power by static means from its available input form into the desired electrical output form. This conversion is performed with semiconductor switching devices such as diodes, thyristors and transistors. In contrast to electronic systems concerned with transmission and processing of signals and data, in power electronics substantial amounts of electrical energy are

processed. The authors at MIT designed this text specifically to teach the subject of power electronics. Although the coverage is broad, they develop topics in sufficient depth to expose the fundamental principles, concepts, techniques, methods, and circuits necessary for the reader to understand and design power electronic systems as diverse as a 5 Watt switching converter and a 600 MWatt high-voltage DC transmission terminal. Topics include an introduction, form and function (topology), introduction to rectifier circuits, bridge and polyphase rectifier circuits, phase-controlled converters, high-frequency switching dc/dc converters, isolated high-frequency dc/dc converters, variable-frequency dc/ac converters, resonant converters, ac/ac converters, dynamics and control, state-space models, linear and piecewise linear models, feedback control design, components, review of semiconductor devices, power diodes, power transistors, thyristors, magnetic components, ancillary issues, gate and base drives, thyristor commutation circuits, snubber circuits and clamps, and thermal modeling and heat sinking. There are plenty of instructive diagrams shown throughout the book, and the only thing I can really say against it is that part two of the book entitled "Dynamics and Control" seems out of place in this book, since it really has nothing much to do with the subject of power electronics and seems to disrupt the flow of what is otherwise an excellent book. Also, it is very hard to cover the subject of dynamics and control adequately in just the four chapters allocated to the subject.

Comprehensive and lucid... this book presents all of the most important subjects in modern power electronics and electric power system control, and presents them in an organized fashion with a readable format. It also touches on many emerging concepts currently being developed in labs and universities, and is revised frequently.

The book covers many different topologies and analysis of power conversion. Analysis was clear and to the point, but some of the explanations of switching was a bit muddled. The topics are also dated as the switching elements are BJTs instead of FETS and BICMOS. Good as a resource.

This book has a complete idea for the Power Electronics. Every line has an important meaning in it. Even though we have to read it very carefully. It worth for you to know all the bible of Power Electronics. One said Power System bible is Stevenson's book, on the other hand, Power Electronics' bible is Kassakian too. You can find everything in this book. You will not be regret if you hit this book.

This is not the best textbook to start you off in Power Electronics. It is OK as a reference book. I prefer much more "Power Electronics: Converters, Applications and Design", Mohan, Undeland and Robbins, Wiley", and wish that my profesor used that one in his class.

It's an excellent and comprehensive review of Power Electronics with a different point of view and a very practical approximation.

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