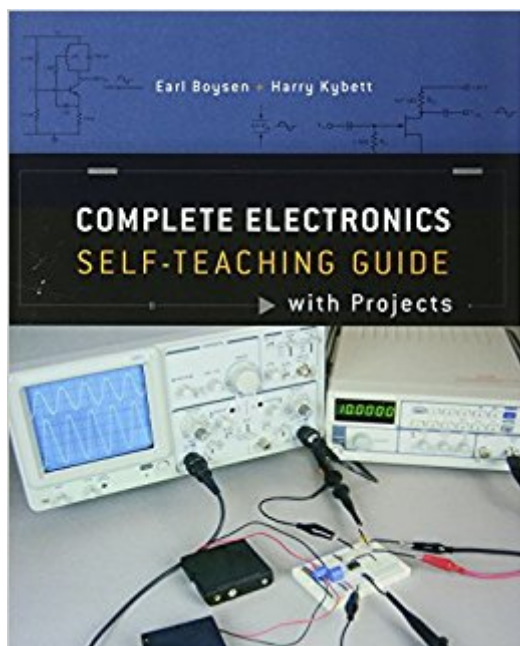


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# Complete Electronics Self-Teaching Guide With Projects



## Synopsis

An all-in-one resource on everything electronics-related! For almost 30 years, this book has been a classic text for electronics enthusiasts. Now completely updated for today's technology, this latest version combines concepts, self-tests, and hands-on projects to offer you a completely repackaged and revised resource. This unique self-teaching guide features easy-to-understand explanations that are presented in a user-friendly format to help you learn the essentials you need to work with electronic circuits. All you need is a general understanding of electronics concepts such as Ohm's law and current flow, and an acquaintance with first-year algebra. The question-and-answer format, illustrative experiments, and self-tests at the end of each chapter make it easy for you to learn at your own speed. Boasts a companion website that includes more than twenty full-color, step-by-step projects Shares hands-on practice opportunities and conceptual background information to enhance your learning process Targets electronics enthusiasts who already have a basic knowledge of electronics but are interested in learning more about this fascinating topic on their own Features projects that work with the multimeter, breadboard, function generator, oscilloscope, bandpass filter, transistor amplifier, oscillator, rectifier, and more You're sure to get a charge out of the vast coverage included in Complete Electronics Self-Teaching Guide with Projects!

## Book Information

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## Customer Reviews

Follow hands-on projects so you can work with electronic circuits Are you ready to keep up with the rapidly evolving world of electronic products? From smartphones and tablets to MP3 players and

digital cameras, this resource will build your understanding of how the latest electronic circuits work. You'll dive into hands-on projects and walk through the calculations and concepts for key circuits to get you up to speed. As you progress through the chapters, you'll learn how to build the circuits, and then observe or measure how they work so you can apply the information on your own. Learn how to control the flow of electric current. Design a transistor circuit, and compare the switching action of a JFET and a BJT. Explore the use of resistors, capacitors, and inductors in bandpass and band-reject filters. Use BJTs, JFETs, and operational amplifiers in amplifier circuits. Find out how an oscillator works, and then design and build one. Discover how a transformer converts AC voltage to a higher or lower voltage. Calculate the values of components that produce a specified DC output voltage for a power supply circuit. The book's website ([www.buildinggadgets.com](http://www.buildinggadgets.com)) provides project pages that include links to suppliers and are kept up to date with supplier part numbers for components you'll need.

Earl Boysen is a veteran engineer who maintains two technology-focused websites, [www.buildinggadgets.com](http://www.buildinggadgets.com) and [www.understandingnano.com](http://www.understandingnano.com). He is coauthor of the first edition of *Electronics For Dummies* as well as *Electronics Projects For Dummies* and *Nanotechnology For Dummies*, all published by Wiley. The late Harry Kybett wrote the bestselling first and second editions of *Electronics Self-Teaching Guide*. He was director of engineering operations at Columbia Pictures Corporation. He built many studios and video systems for the broadcasting industry, and created training programs for Sony Corporation of America.

Great book. Very clear and easy to understand

This is one of the best electronics books I have seen to date, especially for the price. The material is presented in an easy to read and understand manner. Some sections may sometimes come across a bit brief, or incomplete, but sometimes that is all that is needed to learn a certain topic.

Sometimes, too much, is too much... There are many lab exercises, and most of us will find that we do not have the equipment/test equipment needed to complete them. I do feel they shouldn't have included these in the book, but sometimes doing it is easier to understand than reading about it.

Also, throughout the book, there are questions and answers about what you had just read, which is great, but sometimes they put the answers just below the questions on the same page. I feel that the answers should have been placed at the end of the chapter or somewhere else in the book instead. This is a all-in-one book, an overview of electronics that a person can understand without

further instruction. But, if there is something you find that you want to know more about after reading through this book, then I would suggest purchasing a more expensive textbook or a more specialized book afterwards. As I am sure you will see from reading other reviews, there is a bit of complaints about errors. As with any book, especially technical books, there will be some mistakes no matter how hard the authors and editors try to avoid them. Yes, as stated, there are a few errors, but with a little patience and research, and if you are astute enough to notice the error, than it will be easy enough to correct it by writing over what is incorrect. Overall, "Complete Electronics" is a great read.

Outstanding

A++

This could be a truly excellent book, but ... it needs some competent technical editing. If this book is quickly scanned and "flipped through", and the table of contents read, it might seem an outstanding book for those starting electronics. However, actually reading the book and going through the problems sets reveals there are just too many errors and ordering issues. (see below). The problems start as early as chapter 1, "Review and Pre-Test". Questions are frequently asked before the information for an answer is provided, not the other way around as is appropriate for a self-teaching guide. For example, the authors ask a question, for which readers are expected to provide an answer on the blank lines provided, "What is electrical current?". However, they provide the information for this answer after, and not before the question. There are throughout this book more factual and calculation errors than expected or acceptable. In the presentation of the V-I curve, the curve is presented with current on the vertical axis and volts on the horizontal axis. The authors then ask the question, "what is the slope of this curve?". The slope of a curve is  $(y_2 - y_1) / (x_2 - x_1)$ . Ohm's law provides  $R = V / I$  not  $R = I / V$ . However, the authors state the slope of this curve is the resistance. This would be true if the curve was reversed, i.e., with volts on the vertical axis and current on the horizontal one, but is not true as presented. Here are a few other errors that provide an understanding of the problems present: To get the answers provided on page 26 Problem B, the total current has to be less than that stated by the authors. The formula on page 27 is not the correct one for  $I_2$  but for  $I_1$ . In Chapter 2 readers are shown a circuit on page 81 and then asked to answer a question about that circuit on page 82. Unfortunately, not enough information is given to answer the question asked. However, in the answer an assumption, for which no basis is presented,

provides the missing information, etc. These seemingly "small" mistakes could be particularly confusing to beginners. The authors are not consistent about rounding, providing answers with two digits after the decimal point in some places and one in others. This is problematic as it often results in reader's answers not agreeing with the authors, particularly where the final answer requires several consecutive calculations. For example, Chapter One's DC Pre Test provides "wrong" answers to some problems such as 9 and 10B, where apparently rounding was used in some steps and, thus, the answers obtained are not correct to any reasonable degree of precision. Because of these problems, confidence in the material presented is often low, and readers need to independently confirm that the information provided is correct. Care in learning earlier material often makes independent confirmation possible, although not always. The mistakes present may even enhance learning for confident students, as they catch the mistakes. However, for those with less confidence, the presence of many mistakes could be a significant problem. The problems clearly result from inadequate technical editing, and attention during writing. This is unexpected from a usually outstanding publisher such as Wiley, particularly for a book in a later edition. Some beginners may find the relatively large number of mistakes daunting. Hopefully, later printings or editions will correct a large portion of this printing's (the first) problems. Another book in this series, "Quick Calculus: A Self-Teaching Guide, 2nd Edition" while now an exceptional book, also had numerous errors in its earlier printings.-----A hopefully gentle rant-----I hope Vine reviewers will not be too upset with these next comments, as these reviewers may perform a useful function for an item that has no reviewers. However, those of us who pay for our books have more "skin in the game" than Vine reviewers. We "buyers", perhaps, read our purchases more carefully, and are less tolerant if a book has problems and probably less hesitant to point out its weaknesses. I often rely on reviews to make a purchase decision. Unfortunately, here the ratio of Vine reviewers compared to "real" buyers seems disproportionate and inappropriately high. The number of positive ratings a book receives often correlates to the chronology of posted reviews and their evaluation. For example, reviews made before a book has many "real" buyers tend to be high. That is the case here, where most of the highly rated reviews, the leading review is an example, are from Vine reviewers who apparently received the book before many "real buyers" did. This may be a cautionary sign. Often a five star Vine review, even if not the most highly rated review, heads the review list. This appears, to me, to be a disservice to potential buyers, although perhaps not to potential sales. should reconsider its policy, if it involves "flooding" Vine reviewers shortly after a book is published with free copies, as this may serve to raise a book's evaluation, perhaps inappropriately. If a potential buyer selects to "See all customer reviews", now defaults to reviews that show the "Most Helpful First"

rather than the "Newest First". To see the newest first the potential buyer must make a manual selection. This default is likely to present Vine Reviews first, as these reviewers often appear to get books to evaluate before buyers, and in some instances appear to rate a technical book even before it is completely "worked through". This seems an inappropriate default, as the first page frequently presents some Vine reviews first, owing to their postings chronology. We should also be cautious of reviews from reviewers with more than 930 book reviews. That would average about one book a week, for each of the 18 years since 1995 when first went active. This is, to me, an impossible schedule if it includes fully reading and solving the problems in technical books such as the one reviewed here. Reviewers who have NOT worked through a technical book before reviewing, do a disservice to potential buyers. Hopefully, can develop an algorithm that minimizes Vine reviewers' contribution to a book's "star rating" once the proportion of buyers providing reviews is relatively high. It seems appropriate for to consider accepting only a single Vine review from Vine reviewers who have not bought the book reviewed. Hopefully, the ratings problem will correct itself over time as more buyers obtain and read this book, and potential buyers read and rate the reviews of buyers, as opposed to Vine reviewers. Now, however, to this reader/buyer in view of the errors and other problems present, the book's rating seems inappropriately high.----- End of rant -----This book really has a lot to offer to its intended audience. The basic organization and design of this book is exceptional. With the proper editing this book clearly deserves, and proper attention given to the ordering of information, it could easily deserve five stars. However, the errors now present are egregious and pervasive. Until, and if, they are corrected, three stars seems appropriate.

Very good book. Useful for non- practioners.

Great teaching aid.

A very good introduction to the fundamental concepts and (discrete) devices used in modern electronic practice. If you want a "hands-on" experience, and are willing to put in the time, this book (structured in modules that walk you through practical examples of how devices and basic circuits work) could be a good choice. I note the criticisms by other reviewers, and don't disagree with them. I've been less than completely satisfied by the format (as noted elsewhere, "backwards" Q-&-A ordering), and sometimes the explanations are skimpy. Just one example: the section on diodes, particularly the functioning of zener diodes, just wasn't adequate for me--I had to consult other books in my library (which had more detail and informative graphs) to feel that I had really grasped

the material. I'm still "in progress" with this one, so will reserve further judgment for later. Despite those shortcomings, this self-paced, self-teaching program really does have a lot to offer the beginner. NOTE that if you do all the exercises in this book, it could be costly, depending on how well-supplied your workshop is right now. (And one of the very few missing ingredients of this book is an introductory section with a complete list of devices and supplies that are needed to complete each section). At a minimum, you'll need a breadboard with jumpers, alligator clips, and appropriate devices (transistors, resistors, diodes, coils, and so forth); a power supply; at least one multimeter (and several of the exercises show THREE DMM's in play for simultaneous measurement of circuit parameters like voltage, resistance, and/or current), an oscilloscope, and a function generator. Obviously, if you don't have a particular item, you can forego the exercise, but for maximum return, it's clearly best to have all of these gadgets on hand, either through purchase or borrowing. The arrangement of this book is sequential and logical, the writing is generally clear and readable, and the examples are practical and informative.

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