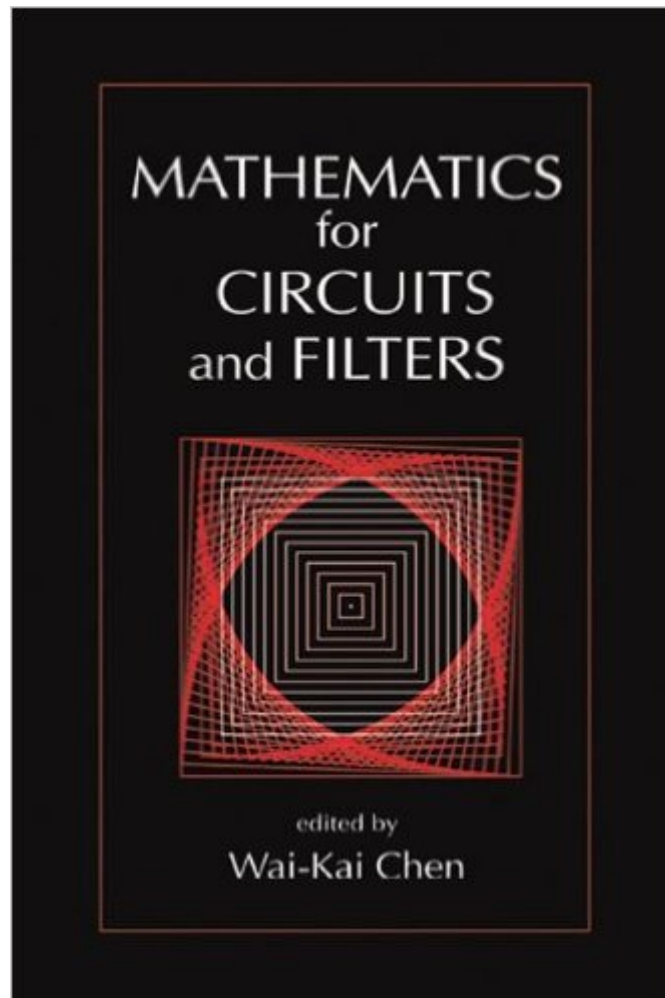# Mathematics For Circuits And Filters

Synopsis

Every engineering professional needs a practical, convenient mathematics resource, without extensive theory and proofs. Mathematics for Circuits and Filters stresses the fundamental theory behind professional applications, making an excellent, flexible resource that enables easy access to the information needed to deal with circuits and filters.The sections feature frequent examples and illustrations, reinforcing the basic theory. The examples also demonstrate applications of the concepts. References at the end of each section are drawn from not only traditional sources, but from relevant, nontraditional ones as well, including software, databases, standards, seminars, and conferences. This leads advanced researchers quickly to the data they may need for more specialized problems.An international panel of experts developed the chapters for practicing engineers, concentrating on the problems that they encounter the most and have the most difficulty with. Mathematics for Circuits and Filters aids in the engineer's understanding and recall of vital mathematical concepts and acts as the engineer's primary resource when looking for solutions to a wide range of problems.

Book Information

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Customer Reviews

Circuit analysis is a very intense, math-oriented field. The objective is to be able to predict a voltage or current at ANY spot in a circuit, and be sure the circuit is efficient vs. the laws of electricity and electronics. LINEAR circuits can use techniques like complex numbers, substitution, simplification, etc., but NON LINEAR means you're getting into the most advanced math on the planet: Fourier

transforms, matrix calculus, linear algebra, tensors, systems of inequality equations, and much more. Even a single semiconductor (eg. pn diode) makes the circuit nonlinear, as do time varying components, oscillators, etc., so-- tough subject.The author, and his contributors, cover most of the entire field of both circuit and filter advanced math: signal flow graphics, graph theory, wavelet transforms, Fouriers, LaPlace, complex numbers, Linear operators and matrices, Systems of linear equalities, vectors and tensors, z-transforms, etc. These are all available less expensively on the web, or in a few, inexpensive, older Dover books (most of these equations are older, and newer algorithms are not covered), so why buy this? Mainly because of 1. Convenience-- all are in one place and 2. Application-- these are specifically for circuits and filters, so you're getting the "meat" whether you want a refresher or a reference.This book takes a balanced, practical approach, and does not spend a lot of time on proofs and theories. If you need to apply a law or theory such as circuit equivalence or reduction, it's boiled down into the math, not the history and theoretical basis, which means the authors can spend much more time on the "meat" -- what do I need to DO to get this answered?However, by applications, I DO NOT mean it's didactic.

Mathematics for Circuits and Filters Binary Polynomial Transforms and Non-Linear Digital Filters (Chapman & Hall/CRC Pure and Applied Mathematics) Advances in 3D Integrated Circuits and Systems (Series on Emerging Technologies in Circuits and Systems) Principles of Transistor Circuits, Eighth Edition: Introduction and guide to the design of amplifiers, function generators, receivers and digital circuits Design of 3D Integrated Circuits and Systems (Devices, Circuits, and Systems) Electronic Circuits: The Definitive Guide to Circuit Boards, Testing Circuits and Electricity Principles Low-Voltage/Low-Power Integrated Circuits and Systems: Low-Voltage Mixed-Signal Circuits (IEEE Press Series on Microelectronic Systems) Digital Signal Processing: Signals, Systems, and Filters Design of Analog Filters 2nd Edition (The Oxford Series in Electrical and Computer Engineering) Thin-Film Optical Filters, Fourth Edition (Series in Optics and Optoelectronics) Your Microscope Hobby: How To Make Multi-colored Filters: Rheinberg, Polarizing, Darkfield and Oblique Digital filters (Prentice-Hall signal processing series) An Engineer's Guide To Fir Digital Filters Analog Filters RF Bulk Acoustic Wave Filters for Communications (Artech House Microwave Library (Hardcover)) Digital Filters for Everyone Digital Filters for Everyone: Third Edition Analog Filters in Nanometer CMOS: 45 (Springer Series in Advanced Microelectronics) Knowing and Teaching Elementary Mathematics: Teachers' Understanding of Fundamental Mathematics in China and the United States (Studies in Mathematical Thinking and Learning Series) Elementary and Middle School Mathematics: Teaching

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