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Nota di contenuto	About the Author ix -- Preface xi -- Acknowledgement xiii -- 1 Electrical Analysis / Terminology and Theorems 1 -- 1.1 Transfer Functions, an Informal Approach 1 -- 1.1.1 Input and Output Ports 3 -- 1.1.2 Different Types of Transfer Function 6 -- 1.2 The Few Tools and Theorems You Did Not Forget . . . 11 -- 1.2.1 The Voltage Divider 11 -- 1.2.2 The Current Divider 12 -- 1.2.3 Thevenin's Theorem at Work 14 -- 1.2.4 Norton's Theorem at Work 19 -- 1.3 What Should I Retain from this Chapter? 25 -- 1.4 Appendix 1A / Finding Output Impedance/Resistance 26 -- 1.5 Appendix 1B / Problems 37 -- Answers 39 -- 2 Transfer Functions 41 -- 2.1 Linear Systems 41 -- 2.1.1 A Linear Time-invariant System 43 -- 2.1.2 The Need for Linearization 43 -- 2.2 Time Constants 44 -- 2.2.1 Time Constant Involving an Inductor 47 -- 2.3 Transfer Functions 49 -- 2.3.1 Low-entropy Expressions 54 -- 2.3.2 Higher Order Expressions 59 -- 2.3.3 Second-order Polynomial Forms 60 -- 2.3.4 Low-Q Approximation for a 2nd-order Polynomial 62 -- 2.3.5 Approximation for a 3rd-order Polynomial 68 -- 2.3.6 How to Determine the Order of the System? 69 -- 2.3.7 Zeros in the Network 76 -- 2.4 First Step Towards a Generalized 1st-order Transfer Function 78 -- 2.4.1 Solving 1st-order Circuits with Ease, Three Examples 82 -- 2.4.2 Obtaining the Zero with the Null Double Injection 89 -- 2.4.3 Checking Zeros Obtained in Null

Sommario/riassunto

Linear Circuit Transfer Functions: An introduction to Fast Analytical Techniques teaches readers how to determine transfer functions of linear passive and active circuits by applying Fast Analytical Circuits Techniques. Building on their existing knowledge of classical loop/nodal analysis, the book improves and expands their skills to unveil transfer functions in a swift and efficient manner. Starting with simple examples, the author explains step-by-step how expressing circuits time constants in different configurations leads to writing transfer functions in a compact and insightful way. By learning how to organize numerators and denominators in the fastest possible way, readers will speed-up analysis and predict the frequency response of simple to complex circuits. In some cases, they will be able to derive the final expression by inspection, without writing a line of algebra. Key features: * Emphasizes analysis through employing time constant-

based methods discussed in other text books but not widely used or explained. * Develops current techniques on transfer functions, to fast analytical techniques leading to low-entropy transfer functions immediately exploitable for analysis purposes. * Covers calculation techniques pertinent to different fields, electrical, electronics, signal processing etc. * Describes how a technique is applied and demonstrates this through real design examples. * All Mathcad files used in examples and problems are freely available for download. An ideal reference for electronics or electrical engineering professionals as well as BSEE and MSEE students, this book will help teach them how to: become skilled in the art of determining transfer function by using less algebra and obtaining results in a more effectual way; gain insight into a circuit's operation by understanding how time constants rule dynamic responses; apply Fast Analytical Techniques to simple and complicated circuits, passive or active and be more efficient at solving problems.