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Nota di contenuto	Microstrip Filters for RF/Microwave Applications; Contents; Preface; 1. Introduction; 2. Network Analysis; 2.1 Network Variables; 2.2 Scattering Parameters; 2.3 Short-Circuit Admittance Parameters; 2.4 Open-Circuit Impedance Parameters; 2.5 ABCD Parameters; 2.6 Transmission Line Networks; 2.7 Network Connections; 2.8 Network Parameter Conversions; 2.9 Symmetrical Network Analysis; 2.10 Multi-Port Networks; 2.11 Equivalent and Dual Networks; 2.12 Multi-Mode Networks; References; 3. Basic Concepts and Theories of Filters; 3.1 Transfer Functions; 3.1.1 General Definitions 3.1.2 The Poles and Zeros on the Complex Plane3.1.3 Butterworth (Maximally Flat) Response; 3.1.4 Chebyshev Response; 3.1.5 Elliptic Function Response; 3.1.6 Gaussian (Maximally Flat Group-Delay) Response; 3.1.7 All-Pass Response; 3.2 Lowpass Prototype Filters and Elements; 3.2.1 Butterworth Lowpass Prototype Filters; 3.2.2 Chebyshev Lowpass Prototype Filters; 3.2.3 Elliptic Function Lowpass Prototype Filters; 3.2.4 Gaussian Lowpass Prototype Filters; 3.2.5 All-Pass Lowpass Prototype Filters; 3.3 Frequency and Element Transformations;

3.3.1 Lowpass Transformation; 3.3.2 Highpass Transformation
3.3.3 Bandpass Transformation3.3.4 Bandstop Transformation; 3.4 Immittance Inverters; 3.4.1 Definition of Immittance, Impedance and Admittance Inverters; 3.4.2 Filters with Immittance Inverters; 3.4.3 Practical Realization of Immittance Inverters; 3.5 Richards' Transformation and Kuroda Identities; 3.5.1 Richards' Transformation; 3.5.2 Kuroda Identities; 3.5.3 Coupled-Line Equivalent Circuits; 3.6 Dissipation and Unloaded Quality Factor; 3.6.1 Unloaded Quality Factors of Lossy Reactive Elements; 3.6.2 Dissipation Effects on Lowpass and Highpass Filters
3.6.3 Dissipation Effects on Bandpass and Bandstop FiltersReferences; 4. Transmission Lines and Components; 4.1 Microstrip Lines; 4.1.1 Microstrip Structure; 4.1.2 Waves in Microstrip; 4.1.3 Quasi-TEM Approximation; 4.1.4 Effective Dielectric Constant and Characteristic Impedance; 4.1.5 Guided Wavelength, Propagation Constant, Phase Velocity, and Electrical Length; 4.1.6 Synthesis of W/h; 4.1.7 Effect of Strip Thickness; 4.1.8 Dispersion in Microstrip; 4.1.9 Microstrip Losses; 4.1.10 Effect of Enclosure; 4.1.11 Surface Waves and Higher-Order Modes; 4.2 Coupled Lines
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5.1.3 Semilumped Lowpass Filters Having Finite-Frequency Attenuation Poles

Sommario/riassunto

Advanced, specialized coverage of microstrip filter design Microstrip Filters for RF/Microwave Applications is the only professional reference focusing solely on microstrip filters. It offers a unique and comprehensive treatment of filters based on the microstrip structure and includes full design methodologies that are also applicable to waveguide and other transmission line filters. The authors include coverage of new configurations with advanced filtering characteristics, new design techniques, and methods for filter miniaturization. The book utilizes numerous desig