

Features a completely rewritten section on wide bandgap transistors and 100 illustrations

# RF and Microwave Passive and Active Technologies

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A volume in the **Electrical Engineering Handbook** series • Edited by Richard C. Dorf, University of California, Davis, USA



## Details a Wide Range of Component Technologies Used in Modern RF and Microwave Systems

In the high frequency world, the passive technologies required to realize RF and microwave functionality present distinctive challenges. SAW filters, dielectric resonators, MEMS, and waveguide do not have counterparts in the low frequency or digital environment. Even when conventional lumped components can be used in high frequency applications, their behavior does not resemble that observed at lower frequencies. **RF and Microwave Passive and Active Technologies** provides detailed information about a wide range of component technologies used in modern RF and microwave systems.

Updated chapters include new material on such technologies as MEMS, device packaging, surface acoustic wave (SAW) filters, bipolar junction and heterojunction transistors, and high mobility electron transistors (HMETs). The book also features a completely rewritten section on wide bandgap transistors.

## FEATURES

- Examines the challenges of integrated circuits for microwave and RF applications (MMCs and RFICs) present for design, layout, characterization, and test
- Covers device technologies such as transit time devices, HEMTs and certain vacuum tubes used almost exclusively for high frequency applications
- Explores the potential of Widebandgap Nitride transistors and their properties characteristic to high frequency applications
- Discusses the behavior of materials such as metals, dielectrics, ferroelectrics, and semiconductors in terms of the more complex models required when used as part of a microwave system
- Includes discussions of microwave packaging and antenna considerations

Catalog no. 7220, January 2008, 736 pp.  
ISBN: 978-0-8493-7220-9, \$99.95 / £54.99

## CONTENTS

Introduction, P. Fay  
Microwave and RF Engineering,  
M. Golio

### PASSIVE TECHNOLOGIES

Passive Lumped Components, A. Riddle  
Passive Microwave Devices, M.B. Steer  
Dielectric Resonators, S.J. Fiedziuszko  
RF MEMS, K.R. Varian  
Surface Acoustic Wave (SAW) Filters,  
D.C. Malocha  
RF Coaxial Cables, M.E. Majerus  
Coaxial Connectors, D. Anderson  
Antenna Technology, J.B. West  
Phased Array Antenna Technology,  
J.B. West  
The Fresnel Zone Plate Antenna,  
J.C. Wiltse  
RF Package Design and Development,  
J.S. Pavio

### ACTIVE DEVICE TECHNOLOGIES

Varactors, J. Stake  
Schottky Diode Frequency Multipliers,  
J.R. East and I. Mehdi  
Transit Time Microwave Devices  
Transistors, R.J. Trew  
Bipolar Junction Transistors (BJTs),  
J.C. Cowles  
Heterostructure Bipolar Transistors  
(HBTs), W. Liu  
Metal-Oxide-Semiconductor Field  
Effect Transistors (MOSFETs),  
J. Costa, M. Carroll, A. Rezvani, and  
T. Mckay  
RFCMOS Modeling & Circuit  
Applications, J. Costa, M. Carroll,  
A. Rezvani, and T. Mckay  
Metal Semiconductor Field Effect  
Transistors (MESFETs), M.S. Shur  
High Electron Mobility Transistors  
(HEMTs), Mishra Chavarkar

Nitride Devices, R.J. Trew  
Microwave Power Tubes, J.C. Whitaker  
Monolithic Microwave IC Technology,  
L.P. Dunleavy  
RF IC design tradeoffs (Bringing  
RFICs to the Market), J.C. Cowles  
**MATERIALS PROPERTIES**  
Metals, M. Golio  
Dielectrics, K.F. Etzold  
Ferroelectrics and Piezoelectrics,  
K.F. Etzold  
Material Properties of Semiconductors,  
H.M. Harris  
Appendix A: Mathematics, Symbols,  
and Physical Constants  
Appendix B: Microwave Engineering  
Appendix, J.P. Wendler

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Other Titles of Interest  
and ordering information