1. Record Nr. UNINA9910460383603321

Autore	Bahl Inder J.
Titolo	Control Components Using Si, GaAs, and GaN Technologies
Pubbl/distr/stampa	Norwood : , : Artech House, , 2014 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2014]
ISBN	1-5231-1704-4 1-60807-712-8
Descrizione fisica	1 online resource (325 p.)
Collana	Artech House microwave library
Disciplina	621.3815
Soggetti	Electronic circuits - Mathematical models Solid state electronics Microwave integrated circuits Radio frequency integrated circuits Phase shifters Limiter circuits Electronic control Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Control Components Using Si, GaAs, and GaN Technologies; Contents; Preface; Chapter 1 Introduction; 1.1 History of Control Components; 1.2 Types of Control Components; 1.3 Solid-State Switching Devices; 1.4 Design of Control Components; 1.5 Fabrication of Control Components; 1.6 Applications; 1.7 Book Organization; References; Chapter 2 Control Devices; 2.1 PIN Diodes; 2.1.1 Operation of PI N Diodes; 2.1.2 PIN Diode Models; 2.2 GaAs MESFETs; 2.2.1 Operation of MESFETs; 2.2.2 Linear Switch FET Models; 2.2.3 Nonlinear Switch FET Models; 2.3 GaAs HE MTs; 2.4 GaAs HBTs; 2.5 GaN HE MTs. 2.6 CMOS Transistors2.6.1 Operation of CMOS Switch; 2.6.2 Various Body Floating Techniques; 2.6.3 CMOS Transistor Models; 2.7 Other Devices; 2.7.1 Schottky Diodes; 2.7.2 Varactor Diodes; 2.8 Transistor Model Scaling; 2.9 Biasing of Switching Devices; 2.9.1 Biasing of PIN Diodes; 2.9.2 Biasing of Transistors; 2.10 Switching Speed; 2.10.

Sommario/riassunto

Control circuits are important parts of RF and microwave systems. Their compact size, high performance, and low cost have played a vital role in the development of cost effective solutions and new applications during the past quarter century. This book provides a comprehensive treatment of such circuits, including device operation and their models, basic circuit theory and designs, and applications. The unique features of this book include in-depth and comprehensive study of control circuits, extensive design equations and figures, treatment of practical aspect of circuits and description of fabrication technologies. It provides you with a broad view of solid state control circuits including various technologies and their comparison and up to date information.