

1. Record Nr.	UNINA9910783128703321
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Titolo	High-speed heterostructure devices : from device concepts to circuit modeling / / Patrick Roblin and Hans Rohdin [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2002
ISBN	1-107-12918-4 1-280-41796-X 9786610417964 0-511-17981-2 1-139-14645-9 0-511-06690-2 0-511-06059-9 0-511-33086-3 0-511-75459-0 0-511-06903-0
Descrizione fisica	1 online resource (xxxiv, 688 pages) : digital, PDF file(s)
Disciplina	621.3815/2
Soggetti	Semiconductors Very high speed integrated circuits Heterostructures Transistors Low voltage integrated circuits
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Half-title; Title; Copyright; Dedication; Contents; Preface; Acknowledgements; List of abbreviations; Introduction; 1 Heterostructure materials; 2 Semiclassical theory of heterostructures; 3 Quantum theory of heterostructures; 4 Quantum heterostructure devices; 5 Scattering processes in heterostructures; 6 Scattering-assisted tunneling; 7 Frequency response of quantum devices from DC to infrared; 8 Charge control of the two-dimensional electron gas; 9 High electric field transport; 10 I-V model of the MODFET; 11 Small- and large-signal AC models for the long-channel MODFET

12 Small-and large-signal AC models for the short-channel MODFET13
DC and microwave electrothermal modeling of FETs; 14 Analytical DC
analysis of short-gate MODFETs; 15 Small-signal AC analysis of the
short-gate velocity-saturated MODFET; 16 Gate resistance and the
Schottky-barrier interface; 17 MODFET high-frequency performance;
18 Modeling high-performance HBTs; 19 Practical high-frequency
HBTs; Index

Sommario/riassunto

Fuelled by rapid growth in communications technology, silicon heterostructures and related high-speed semiconductors are spearheading the drive toward smaller, faster and lower power devices. High-Speed Heterostructure Devices is a textbook on modern high-speed semiconductor devices intended for both graduate students and practising engineers. This book is concerned with the underlying physics of heterostructures as well as some of the most recent techniques for modeling and simulating these devices. Emphasis is placed on heterostructure devices of the immediate future such as the MODFET, HBT and RTD. The principles of operation of other devices such as the Bloch Oscillator, RITD, Gunn diode, quantum cascade laser and SOI and LD MOSFETs are also introduced. Initially developed for a graduate course taught at Ohio State University, the book comes with a complete set of homework problems and a web link to MATLAB programs supporting the lecture material.
