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Disciplina	621.3815
Soggetti	Electronic circuits Computer software—Reusability Quality control Reliability Industrial safety Electronics Microelectronics Microprocessors Circuits and Systems Performance and Reliability Quality Control, Reliability, Safety and Risk Electronics and Microelectronics, Instrumentation Processor Architectures
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Part I: Current Challenges -- Manufacturing Challenges -- Dependability Challenges -- An Application Scenario -- Part II: Solutions -- Manufacturability Solutions -- Dependability Solutions -- Application-Specific Solutions -- Part III: Roadmap -- Technological Road Map -- Architectural Roadmap.
Sommario/riassunto	This book provides comprehensive coverage of the dependability challenges in today's advanced computing systems. It is an in-depth discussion of all the technological and design-level techniques that may be used to overcome these issues and analyzes various

dependability-assessment methods. The impact of individual application scenarios on the definition of challenges and solutions is considered so that the designer can clearly assess the problems and adjust the solution based on the specifications in question. The book is composed of three sections, beginning with an introduction to current dependability challenges arising in complex computing systems implemented with nanoscale technologies, and of the effect of the application scenario. The second section details all the fault-tolerance techniques that are applicable in the manufacture of reliable advanced computing devices. Different levels, from technology-level fault avoidance to the use of error correcting codes and system-level checkpointing are introduced and explained as applicable to the different application scenario requirements. Finally the third section proposes a roadmap of future trends in and perspectives on the dependability and manufacturability of advanced computing systems from the special point of view of industrial stakeholders. Dependable Multicore Architectures at Nanoscale showcases the original ideas and concepts introduced into the field of nanoscale manufacturing and systems reliability over nearly four years of work within COST Action IC1103 MEDIAN, a think-tank with participants from 27 countries. Academic researchers and graduate students working in multi-core computer systems and their manufacture will find this book of interest as will industrial design and manufacturing engineers working in VLSI companies.

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