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Descrizione fisica	1 online resource (325 pages) : illustrations
Collana	Power Systems, , 1612-1287
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Soggetti	Power electronics Computer simulation Electronic circuits Power Electronics, Electrical Machines and Networks Simulation and Modeling Circuits and Systems
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Basic Electric Circuits with Switches, Diodes and Thyristors -- Series Resonant Converter with Zero Current Switching (ZCS) -- Series Resonant Converter with Clamping of Resonant Capacitor Voltage and Zero Current Switching (ZCS) -- Series Resonant Converter with Clamping of the Resonant Capacitor Voltage, Pulse Width Modulation and Zero Current Switching (ZCS) -- Series Resonant Converter with Frequency Modulation and Zero Voltage Switching (ZVS) -- LCC Resonant Converter -- Full-Bridge ZVS-PWM Converter with Capacitive Output Filter -- Full-Bridge ZVS-PWM Converter with Inductive Output Filter -- Neutral Point Clamped ZVS-PWM Converter with Inductive Output Filter -- Asymmetrical Half-Bridge ZVS-PWM Converter -- Active Clamped Forward ZVS-PWM Converter.
Sommario/riassunto	This book describes the operation and analysis of soft-commutated isolated DC–DC converters used in the design of high efficiency and high power density equipment. It explains the basic principles behind first- and second-order circuits with power switches to enable readers to understand the importance of these converters in high efficiency and

high power density power supply design for residential, commercial, industrial and medical use as well as in aerospace equipment. With each chapter featuring a different power converter topology, the book covers the most important resonant converters, including series resonant converters; resonant LLC converters; soft commutation pulse width modulation converters; zero voltage switching; and zero current switching. Each topic is presented with full analysis, a showcase of the power stages of the converters, exercises and their solutions as well as simulation results, which mainly focus on the commutation analysis and output characteristic. This book is a valuable source of information for professionals working in power electronics, power conversion and design of high efficiency and high power density DC–DC converters and switch mode power supplies. The book also serves as a point of reference for engineers responsible for development projects and equipment in companies and research centers and a text for advanced students.