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| Nota di contenuto | Chapter 1. Introduction -- Chapter 2. Motivation for High-Vin Converters and Fundamentals -- Chapter 3. Fast-Switching High-Vin Buck Converters -- Chapter 4. Design of Fast-Switching Circuit Blocks -- Chapter 5. Efficiency and Loss Modeling of High-Vin Multi-MHz Converters -- Chapter 6. Dead Time Control -- Chapter 7. Resonant Converters -- Chapter 8. Conclusion and Outlook. |
| Sommario/riassunto | This book provides readers with guidelines for designing integrated multi-MHz-switching converters for input voltages/system supplies up to 50V or higher. Coverage includes converter theory, converter architectures, circuit design, efficiency, sizing of passives, technology aspects, etc. The author discusses new circuit designs, new architectures and new switching concepts, including dead-time control and soft-switching techniques that overcome current limitations of these converters. The discussion includes technology related issues and helps readers to choose the right technology for fast-switching converters. This book discusses benefits and drawbacks in terms of integration, size and cost, efficiency and complexity, and enables |

readers to make trade-offs in design, given different converter parameters. Describes a study for increasing switching frequencies up to 30 MHz at input voltages up to 50V or higher in the scaling of the size of switching converter passives; Analyzes various buck converter implementations and shows that a preference due to higher efciency depends on the operating point, on the available switch technologies, and on the implementation of the high-side supply generation; Describes an efciency model based on a four-phase model, which enables separation of loss causes and loss locations.