1. Record Nr. UNINA9910139148703321 Autore Ruan Xinbo Titolo Soft-switching PWM full-bridge converters: topologies, control, and design / / Xinbo Ruan Pubbl/distr/stampa Singapore:,: Wiley:,: Science Press,, 2014 ©2014 **ISBN** 1-118-70223-9 1-118-70221-2 1-118-70222-0 Descrizione fisica 1 online resource (234 p.) Disciplina 621.3815/37 PWM power converters Soggetti Switching power supplies 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 Cover; Title Page; Copyright; Contents; About the Author; Preface; Acknowledgment; List of Abbreviations; Chapter 1 Topologies and Operating Principles of Basic Full-Bridge Converters: 1.1 Introduction: 1.1.1 Development Trends of Power Electronics Technology; 1.1.2 Classification and Requirements of Power Electronics Converters; 1.1.3 Classification and Characterization of dc-dc Converters; 1.2 Isolated Buck-Derived Converters; 1.2.1 Forward Converter; 1.2.2 Push-Pull Converter; 1.2.3 Half-Bridge Converter; 1.2.4 Full-Bridge Converter; 1.2.5 Comparison of Isolated Buck-Derived Converters 1.3 Output Rectifier Circuits 1.3.1 Half-Wave Rectifier Circuit; 1.3.2 Full-Wave Rectifier Circuit: 1.3.3 Full-Bridge Rectifier Circuit: 1.3.4 Current-Doubler Rectifier Circuit; 1.4 Basic Operating Principle of Full-Bridge Converters; 1.4.1 Topologies of Full-Bridge Converters; 1.4.2 Pulse-Width Modulation Strategies for Full-Bridge Converters; 1.4.3 Basic Operating Principle of a Full-Bridge Converter with a Full-Wave Rectifier Circuit and a Full-Bridge Rectifier Circuit; 1.4.4 Basic Operating Principle of a Full-Bridge Converter with a Current-Doubler Rectifier Circuit; 1.5 Summary

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Sommario/riassunto

Soft-switching PWM full-bridge converters have been widely used in medium-to-high power dc-dc conversions for topological simplicity, easy control and high efficiency. Early works on soft-switching PWM full-bridge converter by many researchers included various topologies and modulation strategies. However, these works were scattered, and the relationship among these topologies and modulation strategies had not been revealed. This book intends to describe systematically the soft-switching techniques for pulse-width modulation (PWM) full-bridge converters, including the topologies, control a