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Nota di contenuto	Cover; Table of contents; Preface; Introduction; Chapter One: Basic Switching Circuits; Energy Storage Basics; Buck Converter; Boost Converter; Inverting Boost Converter; Buck-Boost Converter; Transformer Isolated Converters; Synchronous Rectification; Charge Pumps; Chapter Two: Control Circuits; Basic Control Circuits; The Error Amplifier; Error Amplifier Compensation; A Representative Voltage Mode PWM Controller; Current Mode Control; A Representative Current Mode PWM Controller; Charge Pump Circuits; Multiple Phase PWM Controllers; Resonant Mode Controllers Chapter Three: The Input Power Supply Off-Line Operation; Radio Interference Suppression; Safety Agency Issues; Power Factor Correction; In-Rush Current; Hold-Up Time; Input Rectifier Considerations; Input Reservoir Capacitor Characteristics; Chapter Four: Non-Isolated Circuits; General Design Method; Buck Converter Designs; Boost Converter Designs; Inverting Designs; Step Up/Step Down (Buck/Boost) Designs; Charge Pump Designs; Layout Considerations;

Chapter Five: Transformer-Isolated Circuits; Feedback Mechanisms; Flyback Circuits; Practical Flyback Circuit Design; Off-Line Flyback Example
Non-Isolated Flyback Example Forward Converter Circuits; Practical Forward Converter Design; Off-Line Forward Converter Example; Non-Isolated Forward Converter Example; Push-Pull Circuits; Practical Push-Pull Circuit Design; Half Bridge Circuits; Practical Half Bridge Circuit Design; Full Bridge Circuits; Chapter Six: Passive Component Selection; Capacitor Characteristics; Aluminum Electrolytic Capacitors; Solid Tantalum and Niobium Capacitors; Solid Polymer Electrolytic Capacitors; Multilayer Ceramic Capacitors; Film Capacitors; Resistor Characteristics; Carbon Composition Resistors
Film Resistors Wire Resistors; Chapter Seven: Semiconductor Selection; Diode Characteristics; Junction Diodes; Schottky Diodes; Passivation; Bipolar Transistors; Power MOSFETs; Gate Drive; Safe Operating Area and Avalanche Rating; Synchronous Rectification; Sense FETs; Package Options; IGBT Devices; Chapter Eight: Inductor Selection; Properties of Real Inductors; Core Properties; Designing a Powder Toroid Choke Core; Choosing a Boost Converter Core; Chapter Nine: Transformer Selection; Transformer Properties; Safety Concerns; Practical Construction Considerations
Choosing a Forward Converter Transformer CorePractical Flyback Core Considerations; Choosing a Flyback Converter "Transformer" Core; Chapter Ten: A ?True Sine WaveZ Inverter Design Example; Design Requirements; Design Description; Preregulator Detailed Design; Output Converter Detailed Design; H Bridge Detailed Design; Bridge Drive Detailed Design; Chapter Eleven: A PC Off-Line Supply; Setting Requirements; The Input Supply; DC-DC Converter; Diode Selection; Inductor Designs; Capacitor Designs; Transformer Design; Index

Sommario/riassunto

This book is a crash course in the fundamental theory, concepts, and terminology of switching power supplies. It is designed to quickly prepare engineers to make key decisions about power supplies for their projects.Intended for readers who need to quickly understand the key points of switching power supplies, this book covers the 20% of the topic that engineers use, 80% of the time. Unlike existing switching power supply books that deal strictly with design issues, this book also recognizes the growing importance of ""off-the-shelf"" commercial switching power supplies, giving