Record Nr. UNINA9910816803603321 Power electronics handbook: devices, circuits, and applications // **Titolo** edited by Muhammad H. Rashid Amsterdam;; Boston,: Elsevier/BH, c2011 Pubbl/distr/stampa **ISBN** 1-282-95503-9 9786612955037 0-12-382037-5 Edizione [3rd ed.] Descrizione fisica 1 online resource (1409 p.) Altri autori (Persone) RashidM. H Disciplina 621.31/7 Soggetti Power electronics **Electronics** 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 Front Cover; Power Electronics Handbook; Copyright; Dedication; Table of Contents: Preface for Third Edition: Chapter 1. Introduction: 1.1. Power Electronics Defined; 1.2. Key Characteristics; 1.3. Trends in Power Supplies; 1.4. Conversion Examples; 1.5. Tools for Analysis and Design; 1.6. Sample Applications; 1.7. Summary; References; Section I: Power Electronics Devices; Chapter 2. The Power Diode; 2.1. Diode as a Switch; 2.2. Properties of PN Junction; 2.3. Common Diode Types; 2.4. Typical Diode Ratings; 2.5. Snubber Circuits for Diode; 2.6. Series and Parallel Connection of Power Diodes 2.7. Typical Applications of Diodes 2.8. Standard Datasheet for Diode Selection; References; Chapter 3. Power Bipolar Transistors; 3.1. Introduction; 3.2. Basic Structure and Operation; 3.3. Static Characteristics; 3.4. Dynamic Switching Characteristics; 3.5. Transistor Base Drive Applications; 3.6. SPICE Simulation of Bipolar Junction

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Power electronics, which is a rapidly growing area in terms of research and applications, uses modern electronics technology to convert electric power from one form to another, such as ac-dc, dc-dc, dc-ac, and ac-ac with a variable output magnitude and frequency. It has many applications in our every day life such as air-conditioners, electric cars, sub-way trains, motor drives, renewable energy sources and power supplies for computers. This book covers all aspects of switching devices, converter circuit topologies, control techniques, analytical methods and some examples of their applicati