

1. Record Nr.	UNINA9910866576103321
Autore	Rindfleisch Christoph
Titolo	Chip-Scale Power Supplies for DC-Link and Grid Applications / / by Christoph Rindfleisch, Bernhard Wicht
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	9783031608209 9783031608193
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (256 pages)
Altri autori (Persone)	WichtBernhard
Disciplina	621.3815
Soggetti	Electronic circuit design Embedded computer systems Power electronics Electronics Design and Verification Embedded Systems Power Electronics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Motivation and Challenges -- High Voltage DC DC Converters -- AC DC Conversion -- Low Power Subcircuits for High Voltage Designs -- Circuit Design in SOI -- Conclusion and Outlook.
Sommario/riassunto	This book is a comprehensive single-source on the design of chip-scale high-voltage power supplies for low-power DC-link and grid applications. It is written in handbook style with systematic guidelines and includes implementation examples. The authors cover the full range, from technology fundamentals to circuit implementation details. The book includes guidelines for the application-specific selection of the converter topology, design guidelines for the inductive components, and a detailed description of low-power optimized control approaches and subcircuits. The authors also include guidelines for the selection and design of high-voltage on-chip power switches and for the reduction of parasitic effects such as capacitive losses. Provides a single source for the design of chip-scale HV power supplies for low-power DC-link and grid applications; Demonstrates different converter implementations, depending on the requirements and the

available technology options; Presents control approaches and innovations on subcircuit level that enable an efficient HV power conversion; An active zero-crossing buffer is presented that shrinks the required buffer capacitor in the AC interface; Describes guidelines for the selection of HV on-chip power switches and the reduction of parasitic effects and losses.

---