1. Record Nr. UNINA9910483957303321 Autore Xu Dianguo **Titolo** Multi-MHz High Frequency Resonant DC-DC Power Converter / / by Dianguo Xu, Yueshi Guan, Yijie Wang, Xiangjun Zhang Singapore:,: Springer Singapore:,: Imprint: Springer,, 2021 Pubbl/distr/stampa 981-15-7424-3 **ISBN** Edizione [1st ed. 2021.] Descrizione fisica 1 online resource (X, 129 p. 128 illus., 101 illus. in color.) Collana CPSS Power Electronics Series, , 2520-8853 Disciplina 621.3132 Soggetti **Energy systems** Electronic circuits Power electronics Electronics Microelectronics **Energy Systems** Circuits and Systems Power Electronics, Electrical Machines and Networks Electronics and Microelectronics, Instrumentation Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Introduction -- Single switch SEPIC type converter -- Half-bridge high order resonant converter -- Full resonant inverter design -- Full resonant rectifier design -- Passive matching network -- Active matching network -- Magnetic-core magnetic component design --Air-core magnetic component design -- Resonent driving method. Sommario/riassunto This book analyzes multi-MHz high frequency resonant DC-DC power converters with operating frequencies ranging from several MHz to tens of MHz in detail, aiming to support researchers and engineers with a focus on multi-MHz high frequency converters. The inverter stage. rectifier stage, matching network stage are analyzed in detail. Based on the three basic stages, typical non-isolated and isolated resonant DC-DC converters are depicted. To reduce the high driving loss under multi-MHz, resonant driving methods are introduced and improved.

Also, the design and selection methods of passive and active

component under multi-MHz frequency are described, especially for

aircore inductor and transformer. Furthermore, multi-MHz resonant converter provides an approach for achieving flexible system. .