Resonance Converters

Lecture
Power Electronics

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Resonance Converter with Parallel Resonant Circuit

Structure of Converters with Resonant AC link

advantages of high frequency:
• small size of components
• simple control („puls train“-control)

disadvantages of high frequency:
• blocking capability of power semiconductors necessary in both directions
• overvoltages possible in the resonant link
• voltage clamp necessary for all power semiconductors
Resonance Converter with Serial Resonant Circuit

Resonant Current Source Inverter; (a) according to Murai, Lipo; (b) according to Ledwich
ZCS Push Pull Resonance Converter

equivalent circuit

voltage and current