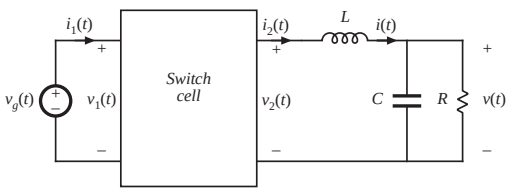
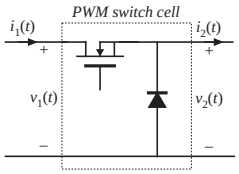
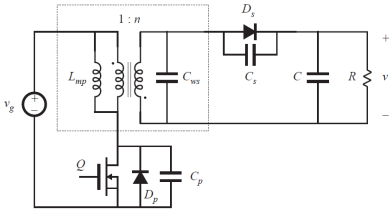
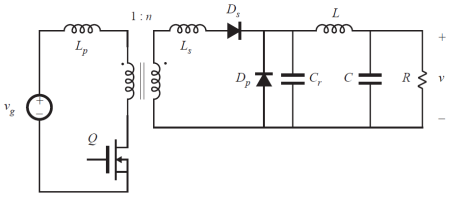
Identification of Resonant Switch



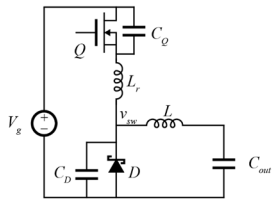


Resonant Switch Identification Examples





ZVS-MR Buck



W. A. Tabisz and F. C. Lee, "Zero-voltage-switching multi-resonant technique-a novel approach to improve performance of high frequency quasi-resonant converters," *Power Electronics Specialists Conference, 1988.*

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Operating Modes

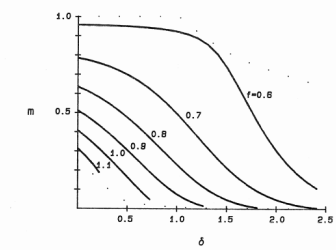
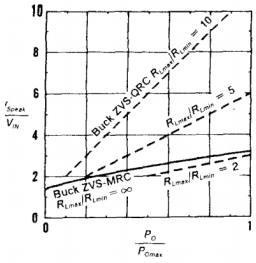


Figure 10.7: Load-to-output DC characteristics of a ZV-MR converter operating in modes $(I, II)_1$.



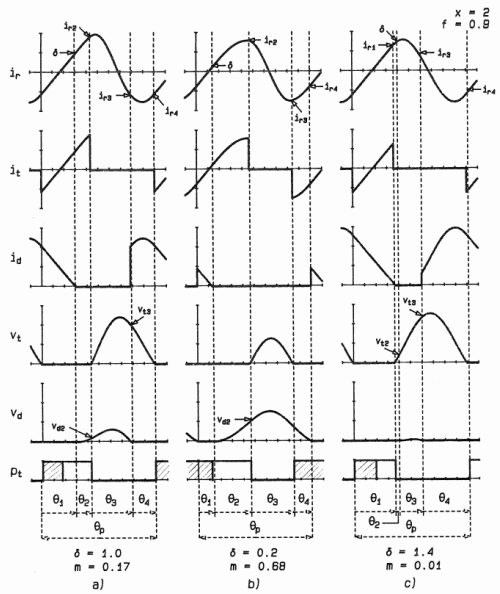


Figure 10.2: Typical waveforms for a ZV-MR converter operating in modes I_1 (a), II_1 (b) or III_1 (c).

D Maksimovic, "Synthesis of PWM and Quasi-Resonant DC-to-DC Power Converters," Ph.D. Thesis, CalTech 1989

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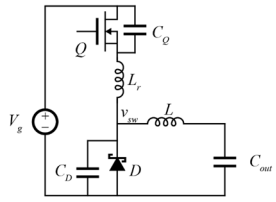
Multi-Resonance



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RF Amplifiers

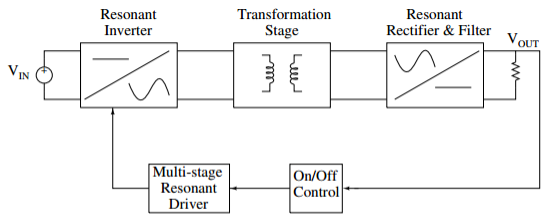

Fig. 1. General structure of the proposed dc-dc converter.

J. M. Rivas, O. Leitermann, Y. Han , D. J. Perreault, " A Very High Frequency dc-dc Converter Based on a Class Φ_2 Resonant Inverter"

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Class-E Amplifier

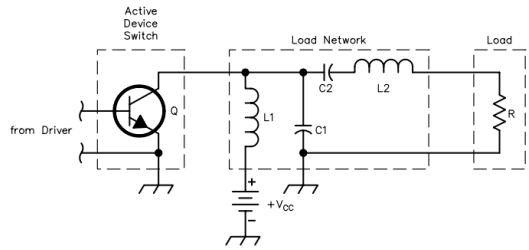

Fig 2—Schematic of a low-order Class-E amplifier.

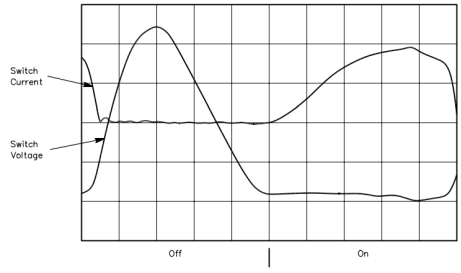

Fig 3—Actual transistor voltage and current waveforms in a low-order Class-E amplifier.

N. O. Sokal, "Class-E RF Power Amplifiers," 2001

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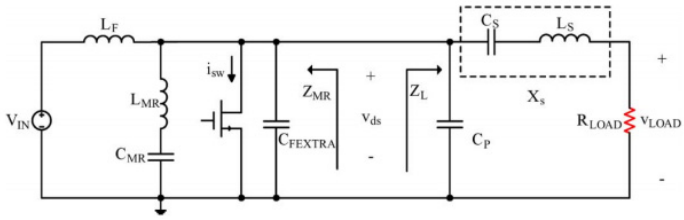
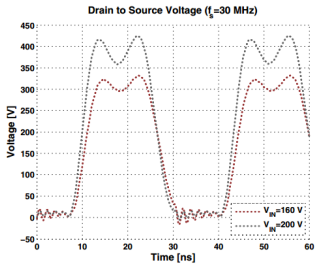
Class Φ_2 DC-DC Converter





J. M. Rivas, O. Leitermann, Y. Han , A. D. Sagneri, and D. J. Perreault, " A High-Frequency Resonant Inverter Topology With Low-Voltage Stress", 2008

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