Series Resonant Tank – Subharmonic Modes

Subharmonic Modes - High Q
Subharmonic Modes – Low Q

SRC Control Plane
**SRC Mode Boundaries**

![Graph showing SRC mode boundaries with different k values for DCM and CCM.](image)

**ZVS Assist Circuits**

![ZVS assist circuits diagram](image)

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Chapter 19: Resonant Conversion
ZVS Tank Examples

Remaining Switching Losses
Idealized Switching Waveforms

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.
Class $\Phi_2$ Inverter

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

VHF DC-DC Converter

$\Phi_2$ Boost Converter


Fig. 5. Trapezoidal resonant gate drive circuit with self-oscillating network. The converter is enabled by applying the voltage $V_{\text{gate}}$, and disabled by setting $V_{\text{gate}}$ to zero. This gate driver is employed in the 110-MHz converter (Fig. 9).