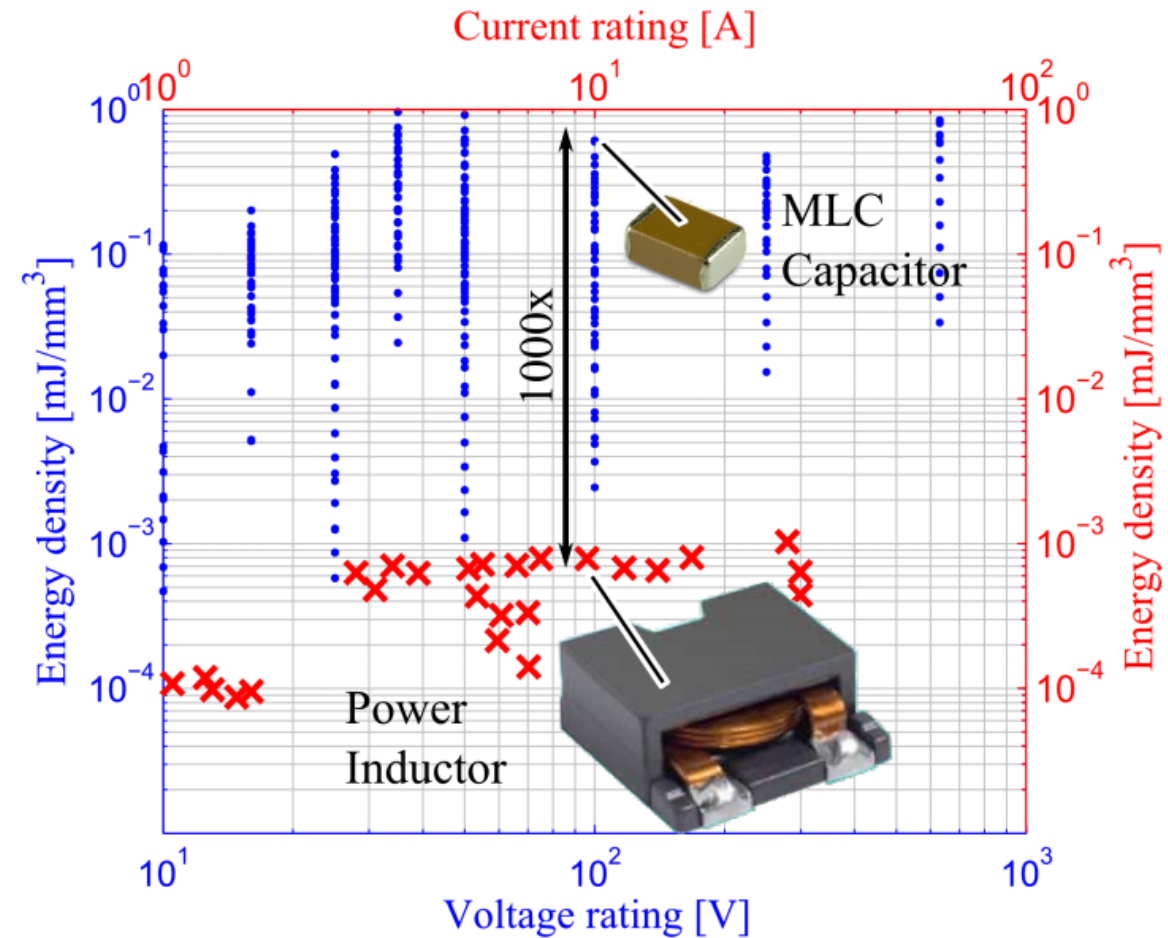
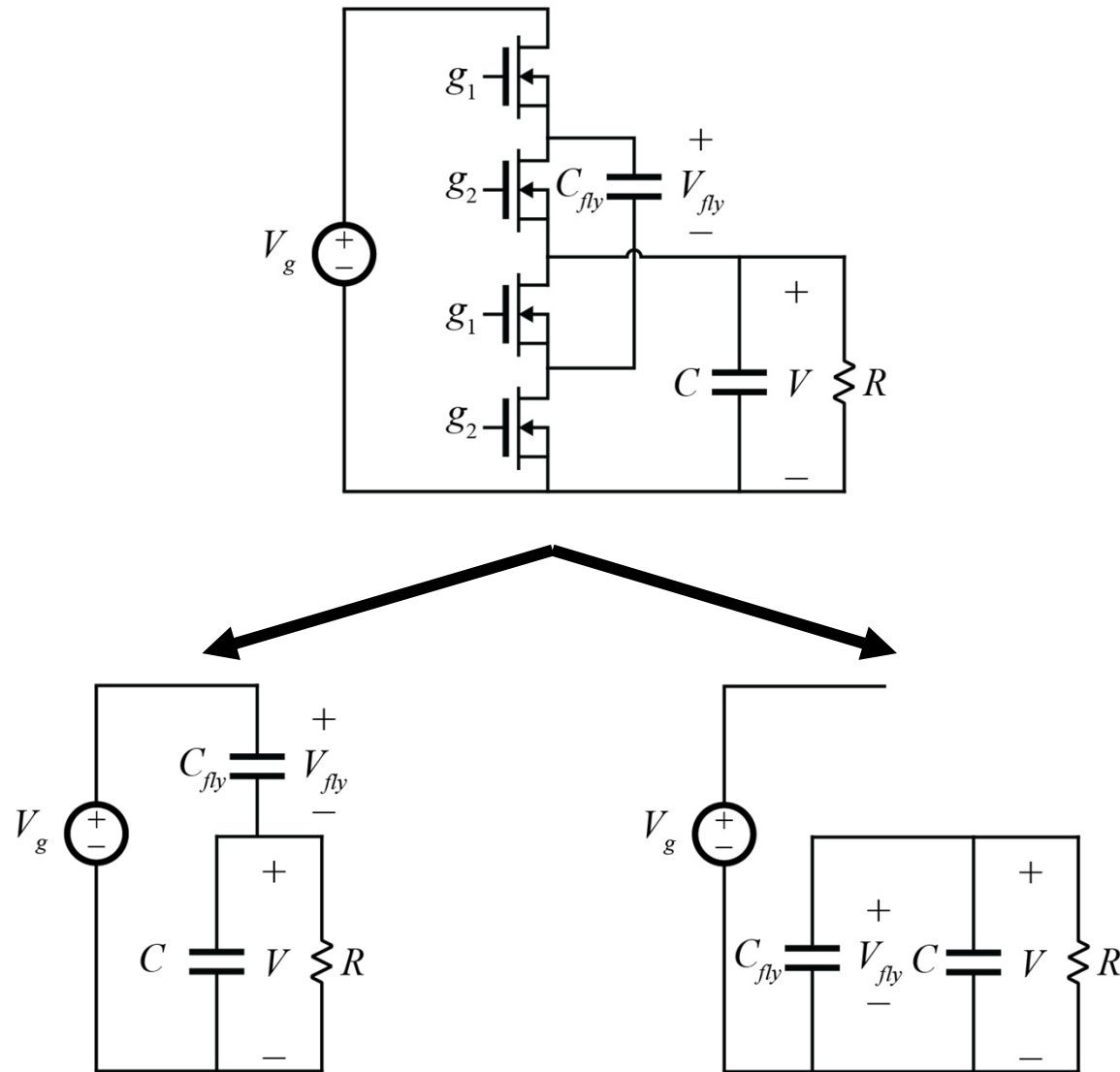


Switched Capacitor Converters



A 2:1 SC Converter



SC Converters

- Fixed conversion ratio
 - Continuous regulation impossible¹ (except linear)
- Not lossless, even with ideal elements
- Can be very small, fully integrated
- **Resonant** versions can reduce loss
- **Hybrid** versions can allow regulation

¹D. Wolaver, "Fundamental study of dc to dc conversion systems," dissertation, 1969

Capacitor Charging: Voltage Source





Capacitor Charging: Current Source





Capacitor Charging: Resonant





Capacitor Charging: Cap-Cap



