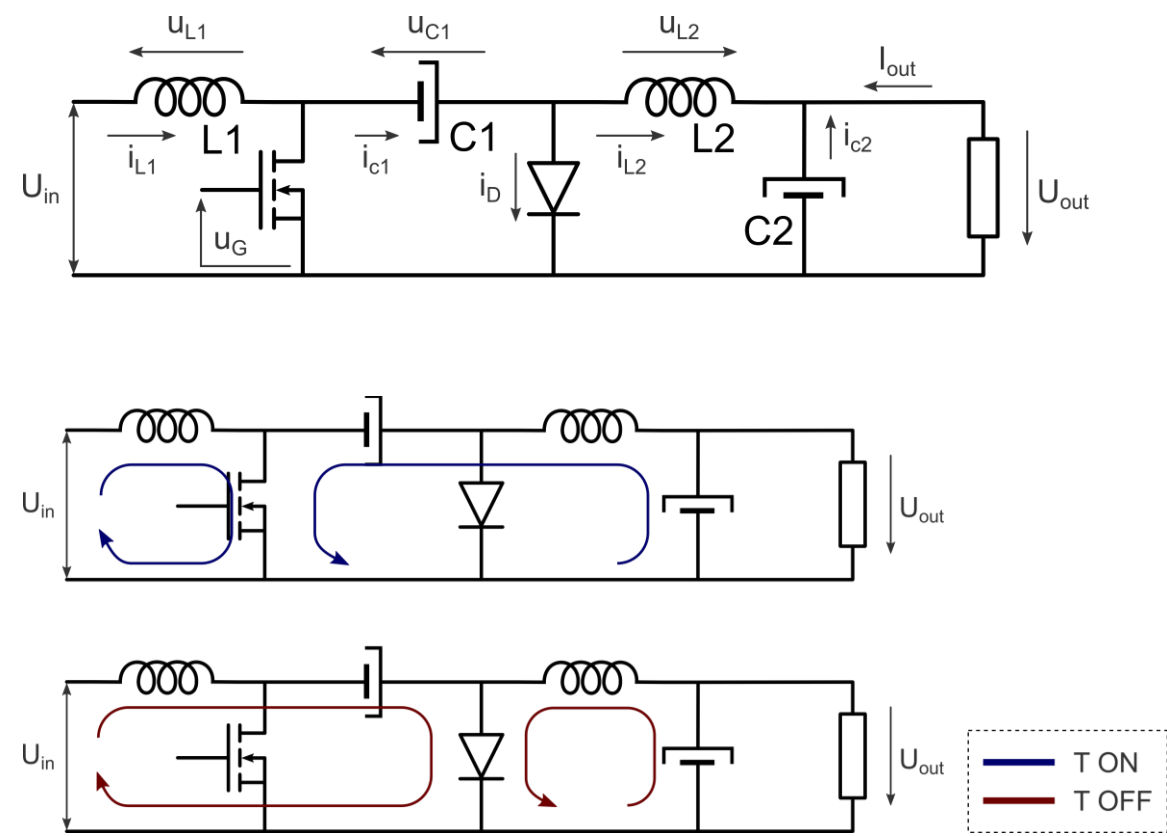
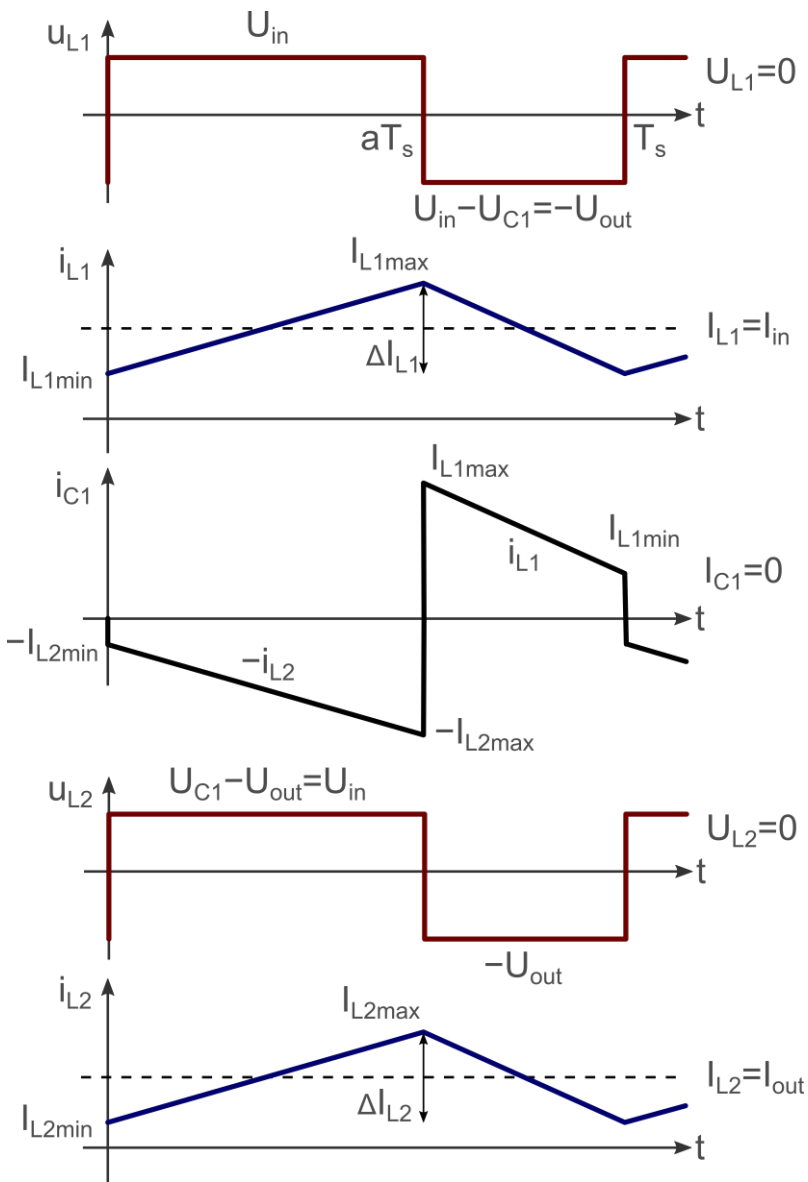


BUCK-BOOST CONVERTERS

-continued-

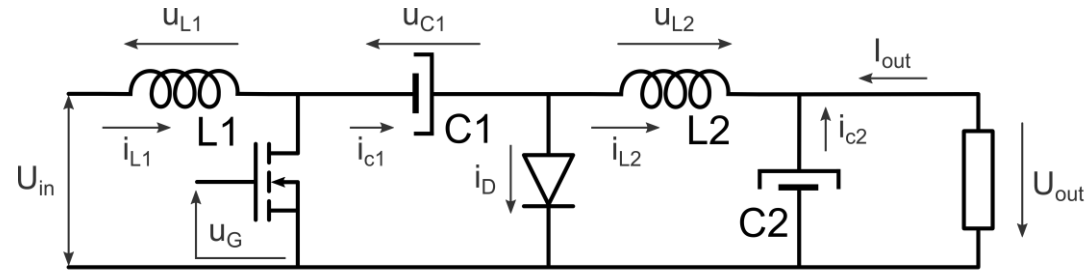
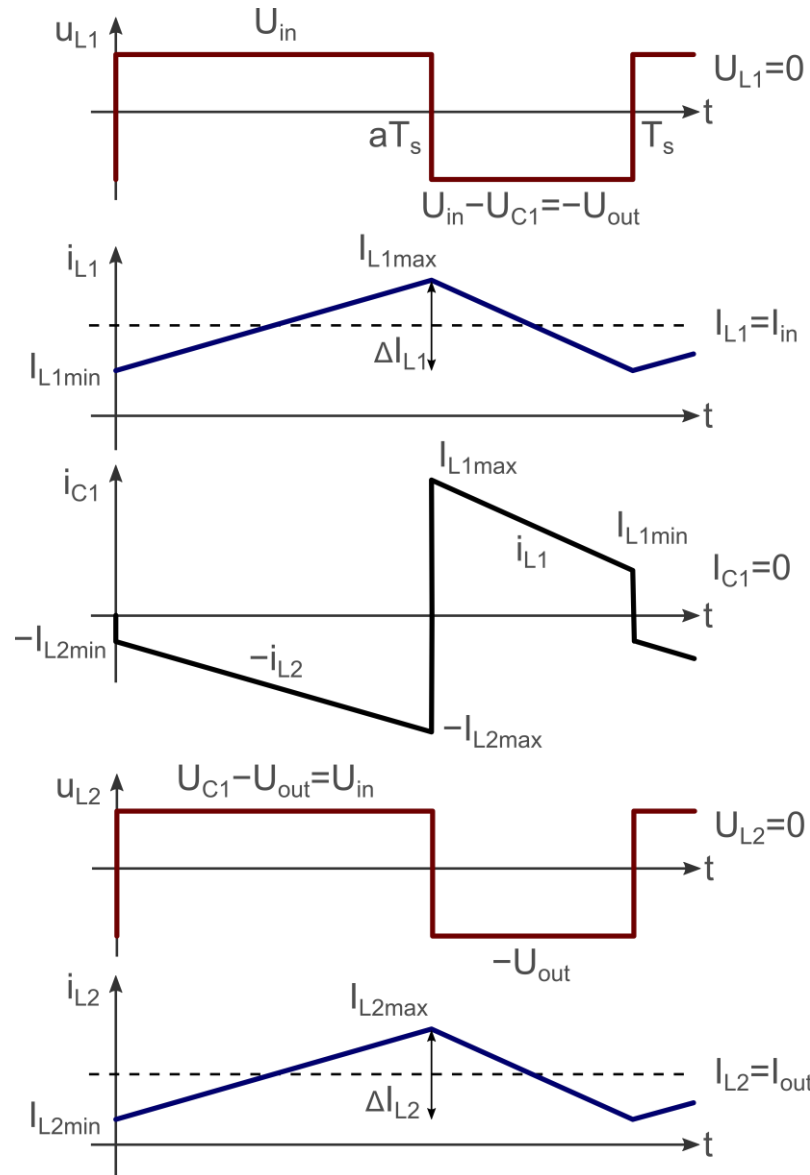
DC POWER SUPPLY

Cuk converter - CCM



DC POWER SUPPLY

Cuk converter - CCM



- Additional notes

$$U_{L1} = U_{L2} = 0 \Rightarrow U_{C1} = U_{in} + U_{out}$$

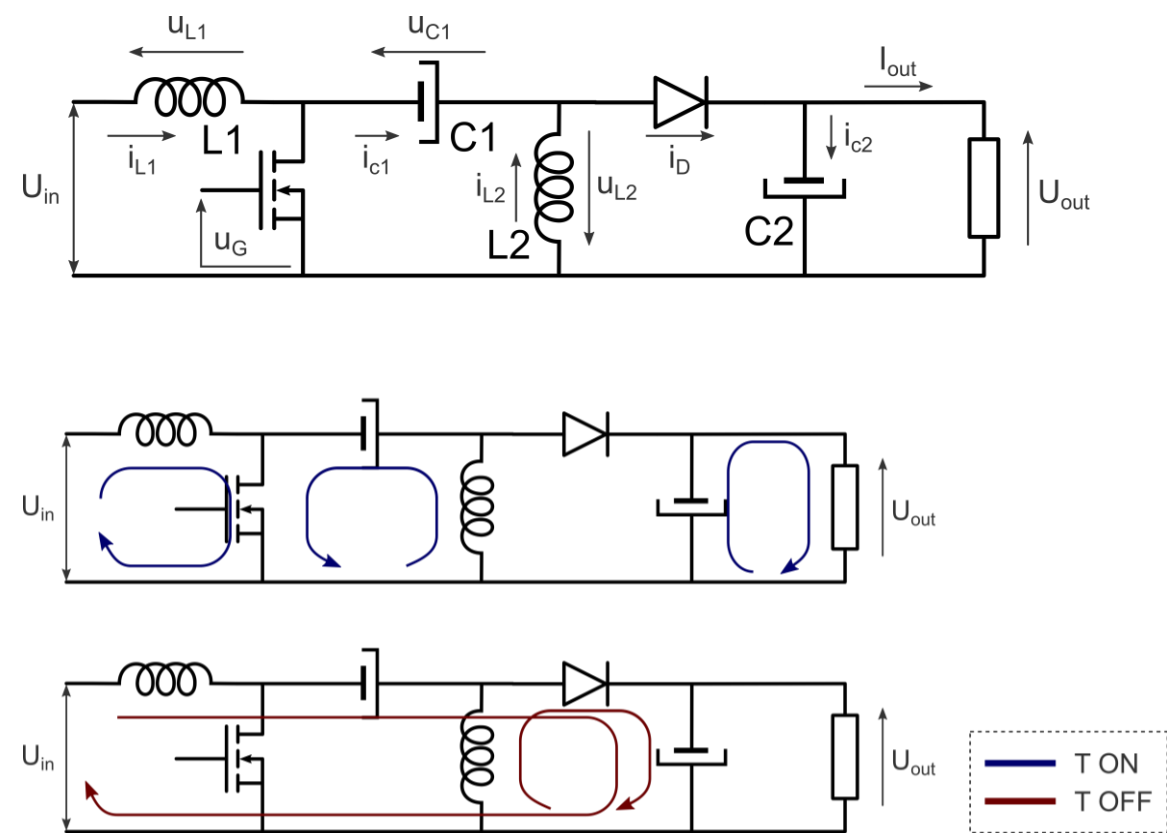
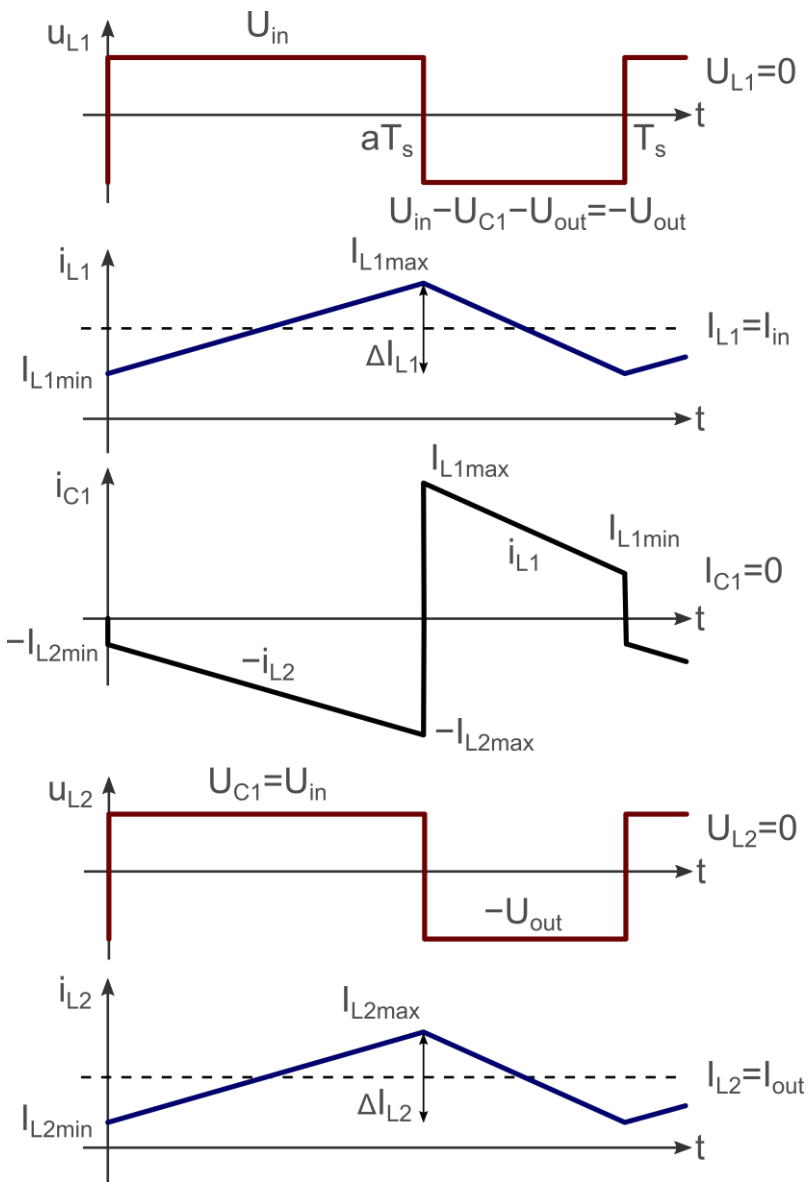
$$u_{L1} = u_{L2} \Rightarrow \Delta I_{L1} = \Delta I_{L2}$$

- Voltage "turns-ratio"

$$U_{L1} = 0 \Rightarrow U_{in} \cdot aT_s = U_{out} \cdot (1-a)T_s \Rightarrow \frac{U_{out}}{U_{in}} = \frac{a}{1-a}$$

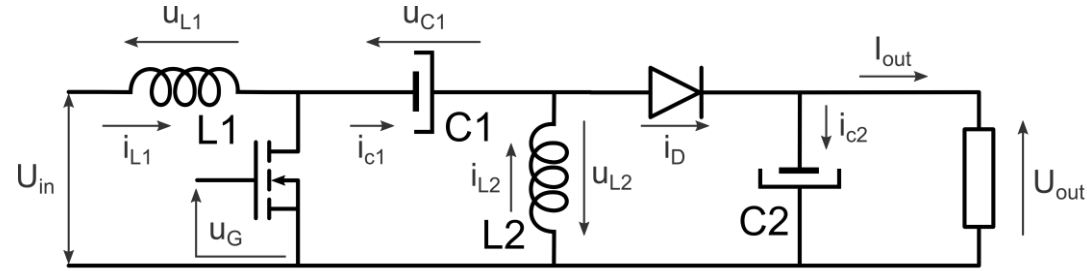
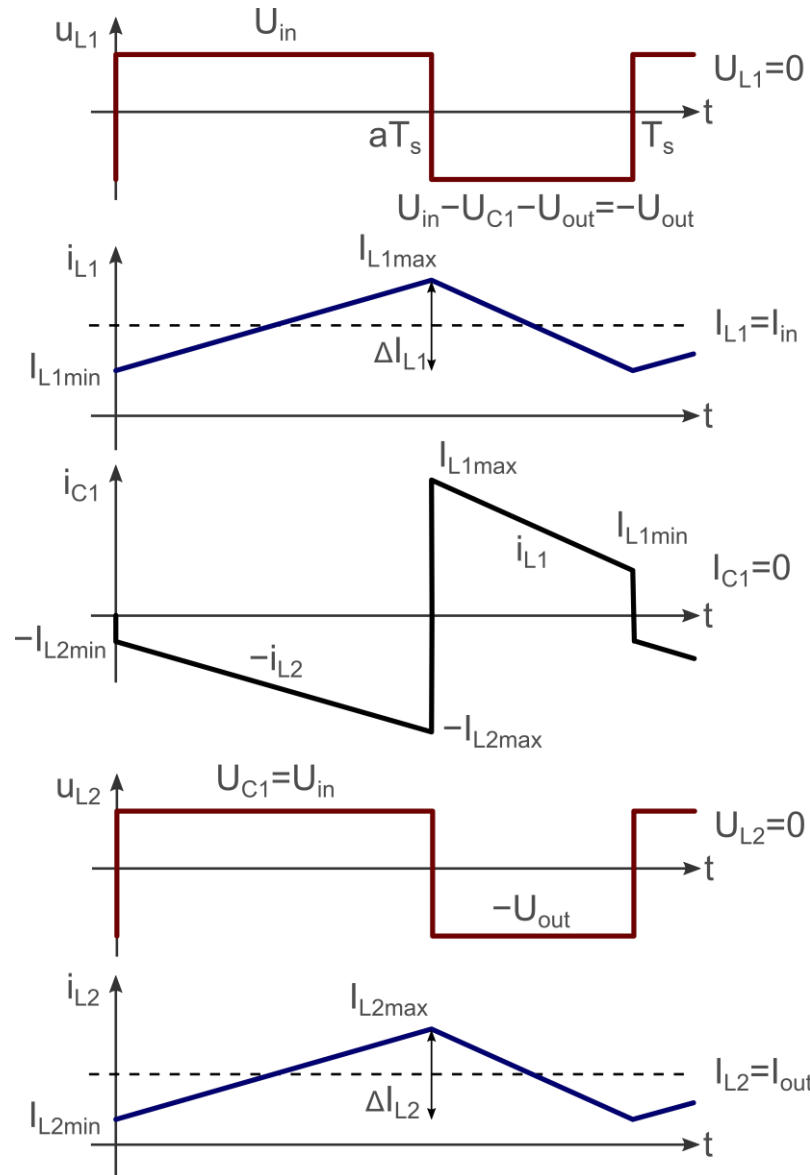
DC POWER SUPPLY

SEPIC - CCM



DC POWER SUPPLY

SEPIC - CCM



- Additional notes

$$U_{L1} = U_{L2} = 0 \Rightarrow U_{C1} = U_{in}$$

$$u_{L1} = u_{L2} \Rightarrow \Delta I_{L1} = \Delta I_{L2}$$

- Voltage "turns-ratio"

$$U_{L1} = 0 \Rightarrow U_{in} \cdot aT_s = U_{out} \cdot (1 - a)T_s \Rightarrow \frac{U_{out}}{U_{in}} = \frac{a}{1 - a}$$