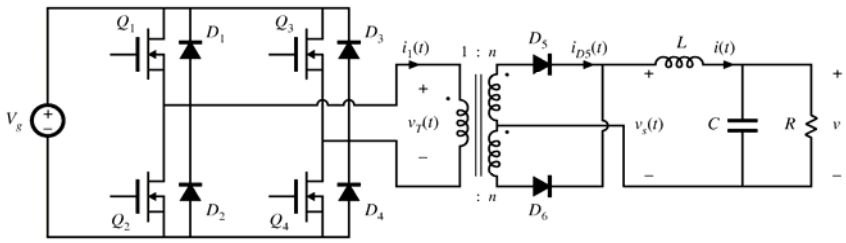
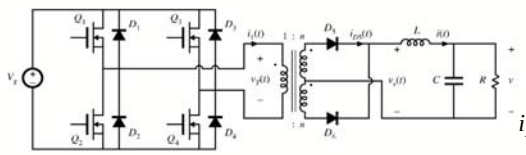
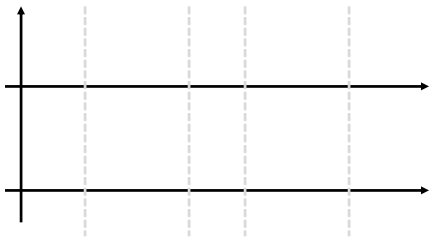
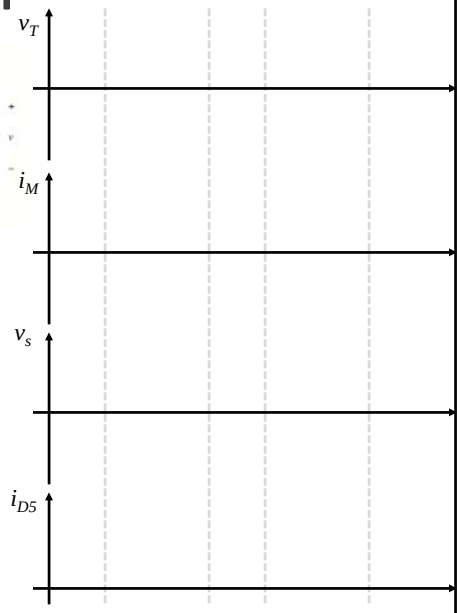
Full Bridge Converter



Full Bridge Converter



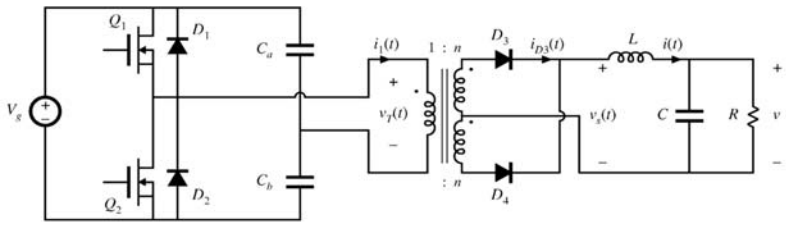




Solution For Conversion Ratio

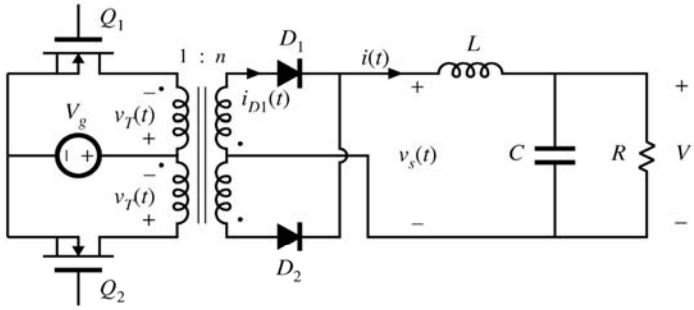
Transformer Saturation: Nonidealities

Half Bridge Isolated Buck



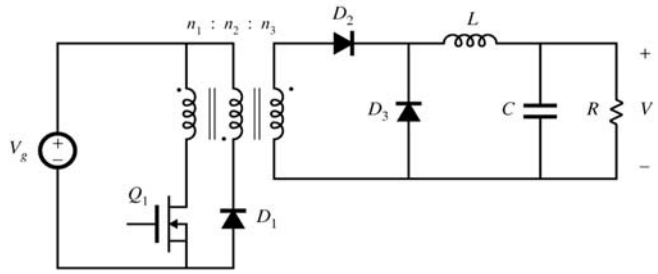
- Replace transistors Q_3 and Q_4 with large capacitors
- Voltage at capacitor centerpoint is $0.5V_g$
- $v_s(t)$ is reduced by a factor of two
- $M = 0.5\ nD$

Push Pull Converter



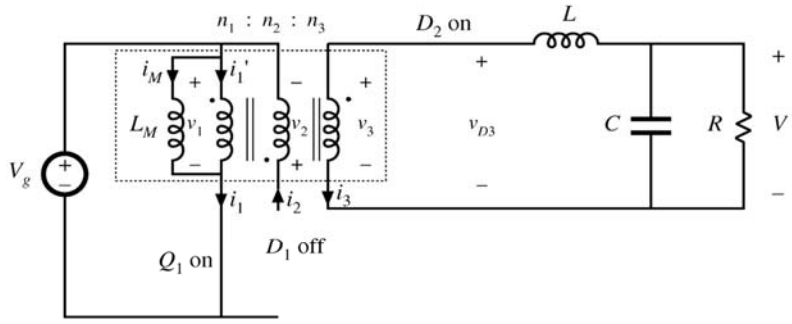
$V = nDV_g \qquad 0 \le D \le 1$

6.3.2 Forward Converter

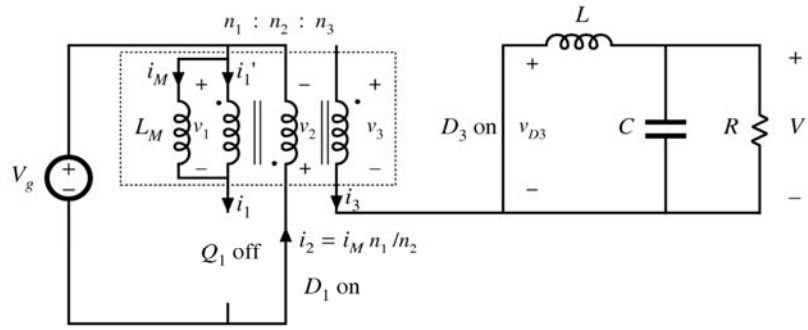


- Buck-derived transformer-isolated converter
- Single-transistor and two-transistor versions
- Maximum duty cycle is limited
- Transformer is reset while transistor is off

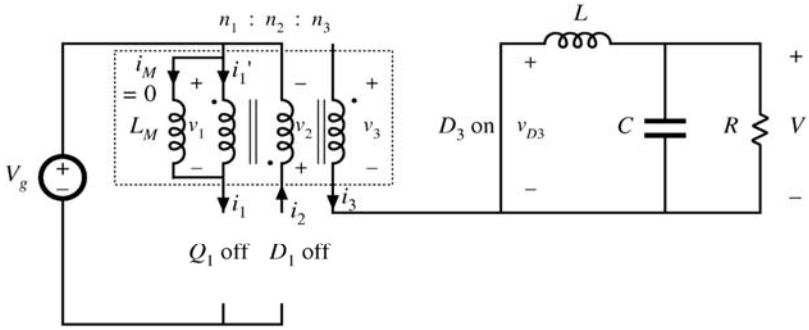
Subinterval 1



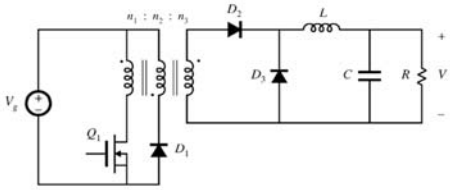
Subinterval 2

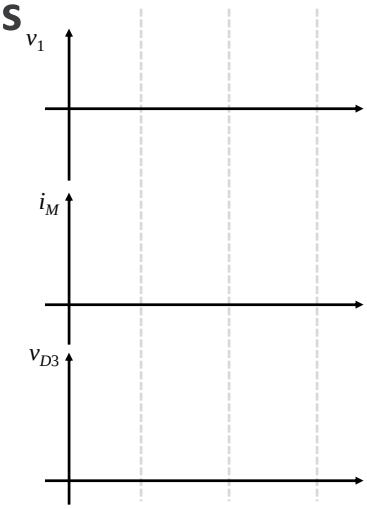


Subinterval 3



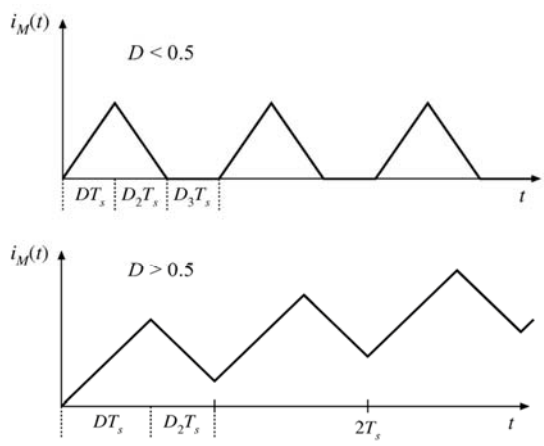
Forward Waveforms





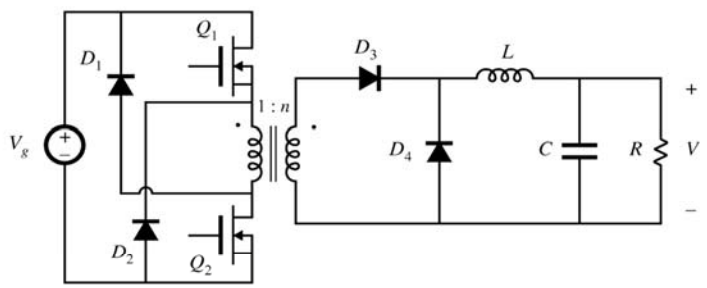
Transformer Saturation When D>0.5

magnetizing current waveforms, for $n_1 = n_2$



Fundamentals of Power Electronics 52 *Chapter 6: Converter circuits*

Two-Transistor Forward Converter



$V = nDV_g$ $\quad D \le \frac{1}{2}$ $\quad \max(v_{Q1}) = \max(v_{Q2}) = V_g$

Flyback Converter: Buck-Boost Derived