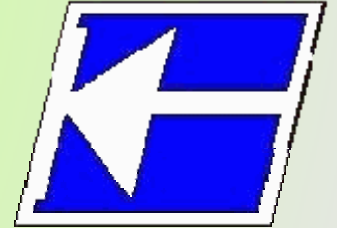


Centro Federal de Educação Tecnológica de Santa Catarina
Departamento Acadêmico de Eletrônica
Conversores Estáticos



Conversores CC-CC Isolados
Estágio de Potência dos Conversores
Flyback e Forward

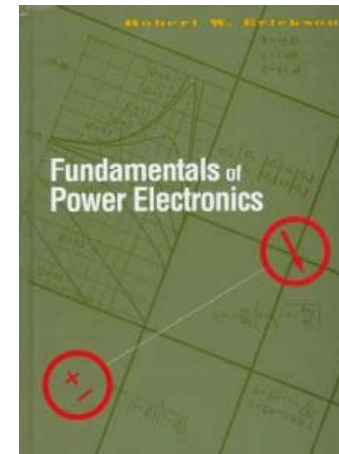
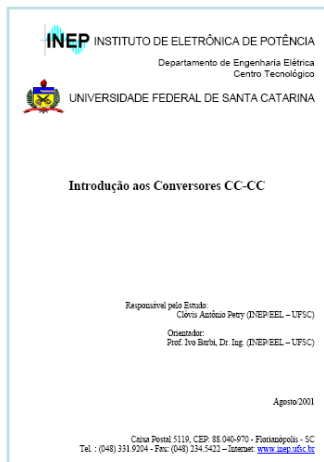
Prof. Clóvis Antônio Petry.

Florianópolis, maio de 2008.

Bibliografia para esta aula

Capítulo 9: Choppers DC-DC

1. Conversores CC-CC isolados.

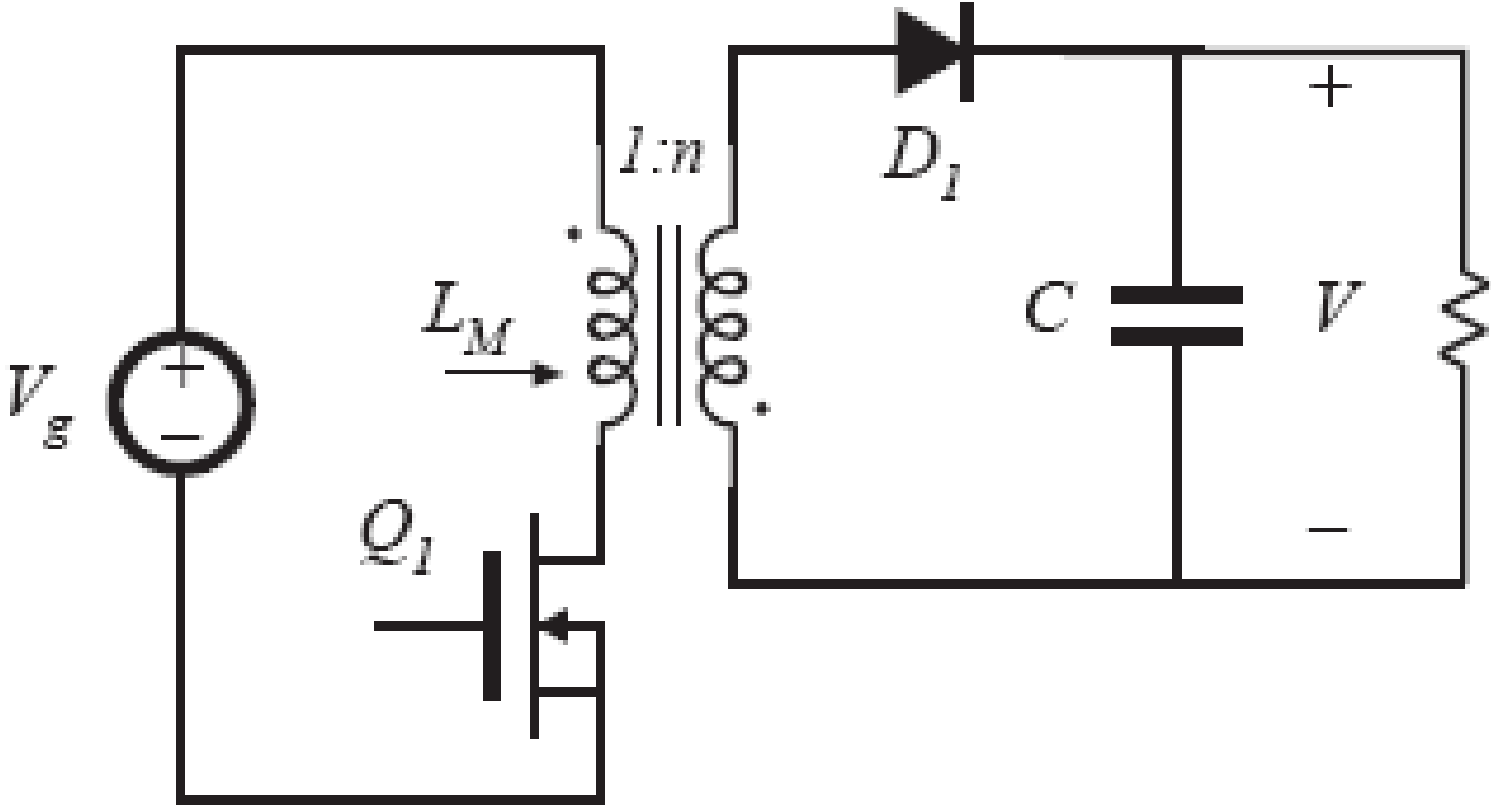


Nesta aula

Conversores CC-CC:

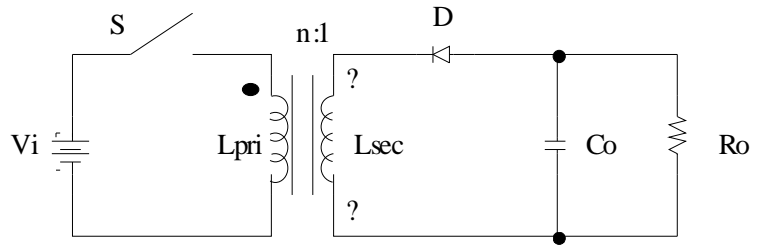
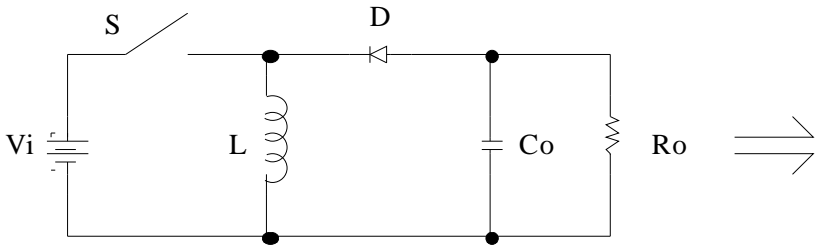
1. Conversor Flyback;
2. Conversor Forward;
3. Outros conversores isolados.

Converter Flyback

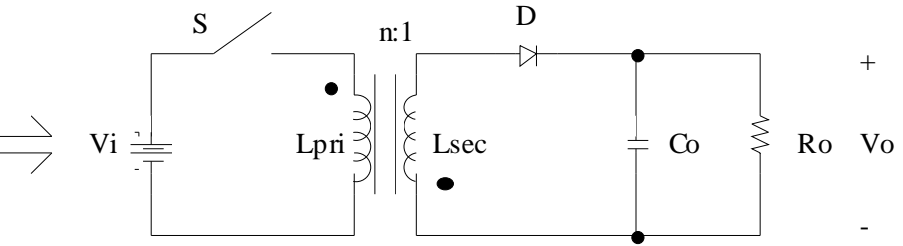
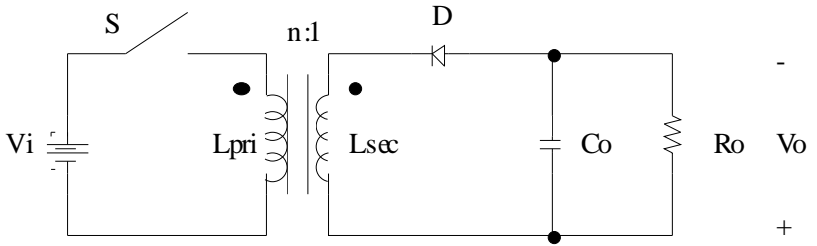


Conversor Flyback

BUCK-BOOST



Qual a polaridade do transformador??



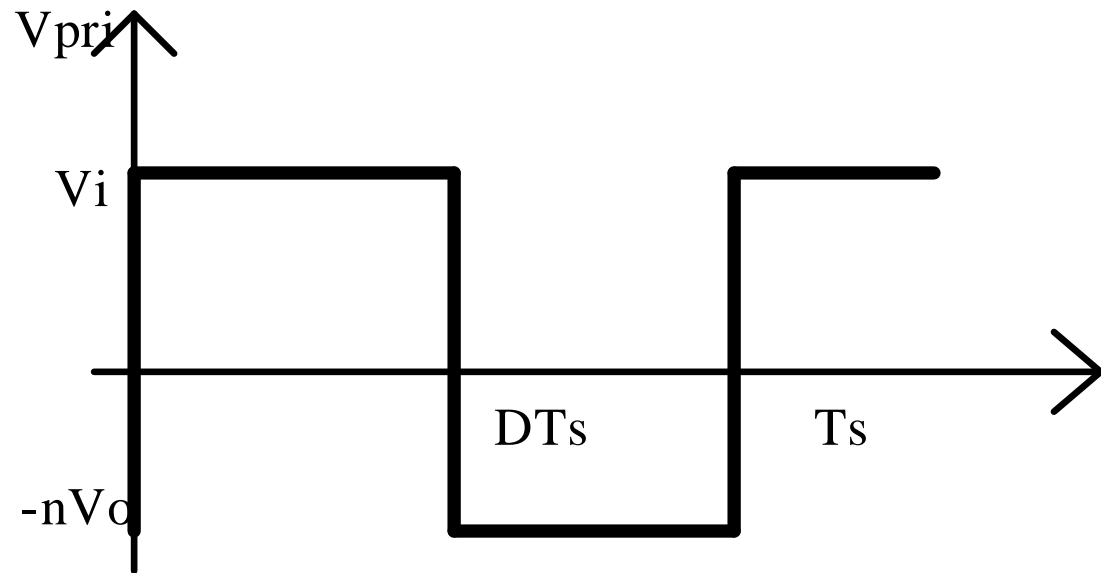
Converter Flyback

$$V_{pri} = \frac{1}{T_s} \int_0^{D \cdot T_s} V_i \cdot dt + \frac{1}{T_s} \int_{D \cdot T_s}^{T_s} (-n \cdot V_o) \cdot dt$$

$$\frac{n \cdot V_o}{V_i} = \frac{D}{1 - D}$$

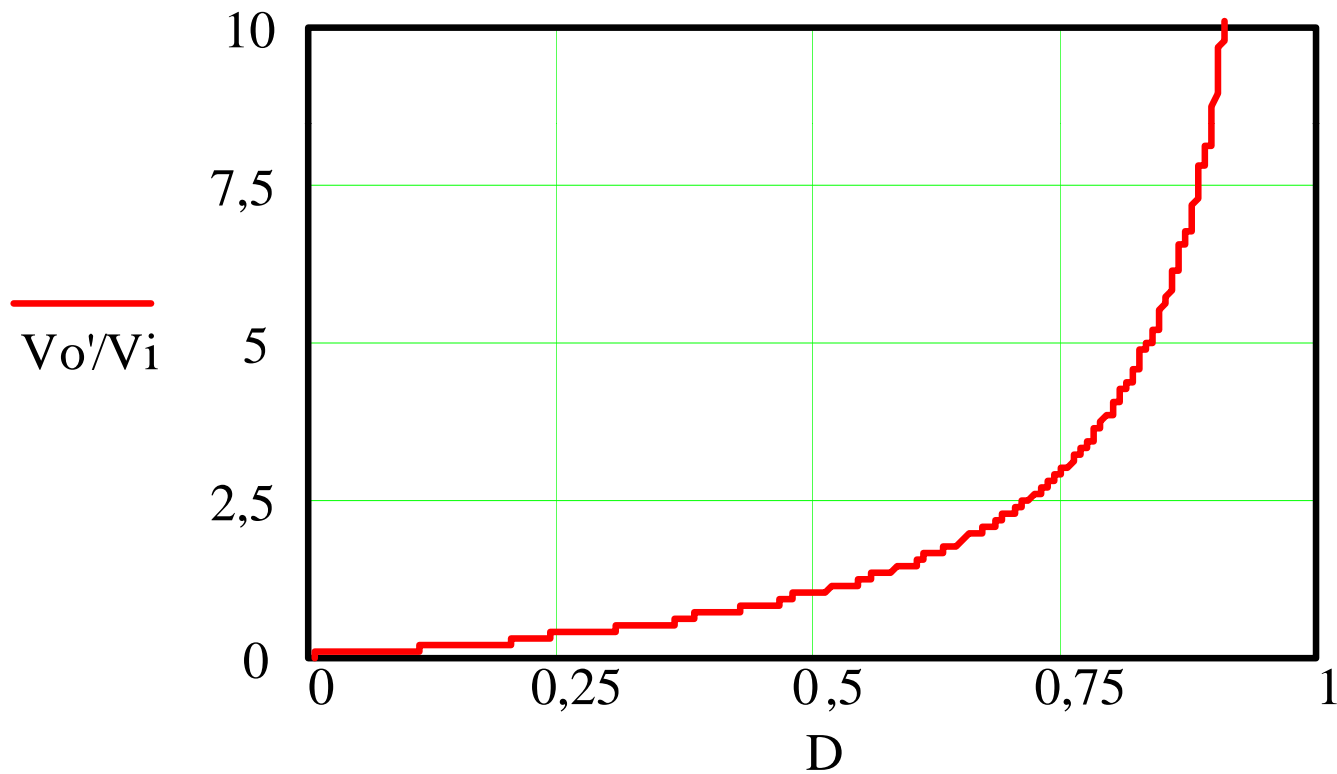
$$V'_o = n \cdot V_o$$

$$\frac{V'_o}{V_i} = \frac{D}{1 - D}$$

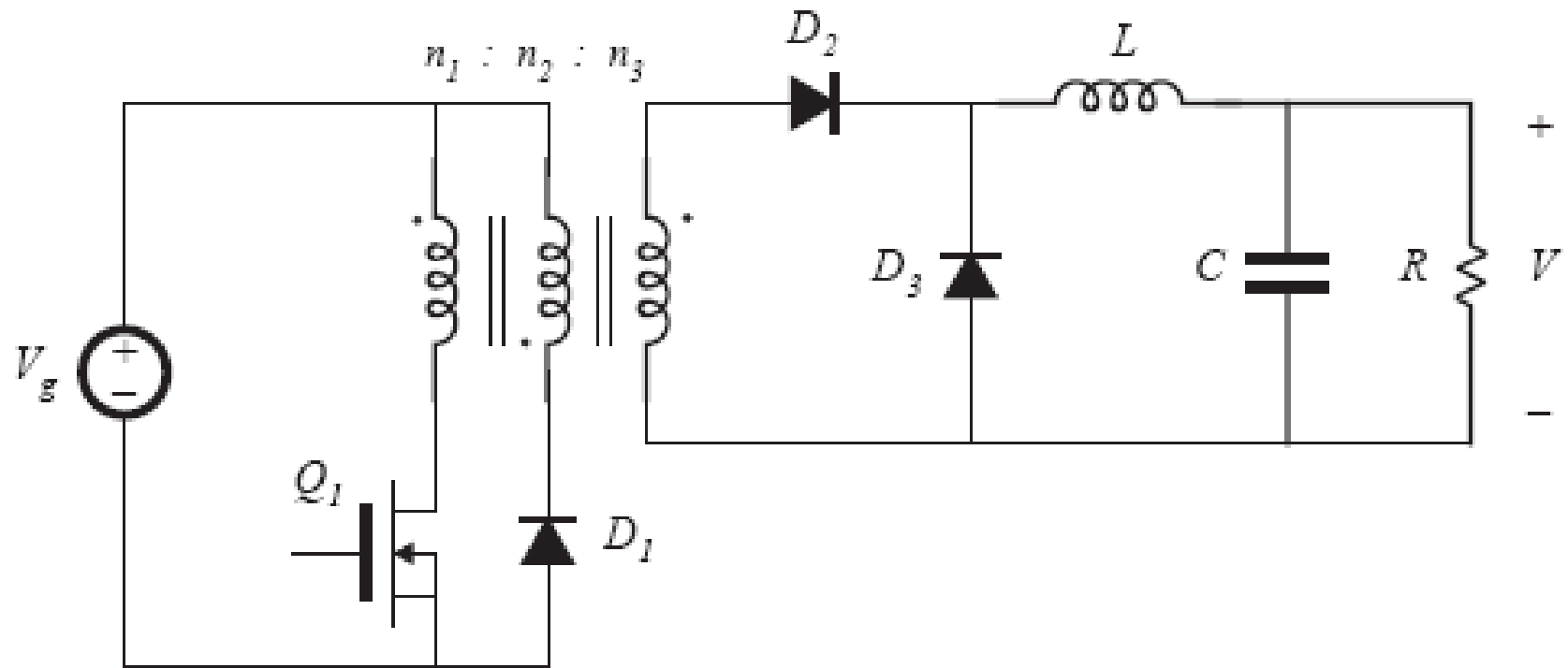


Conversor Flyback

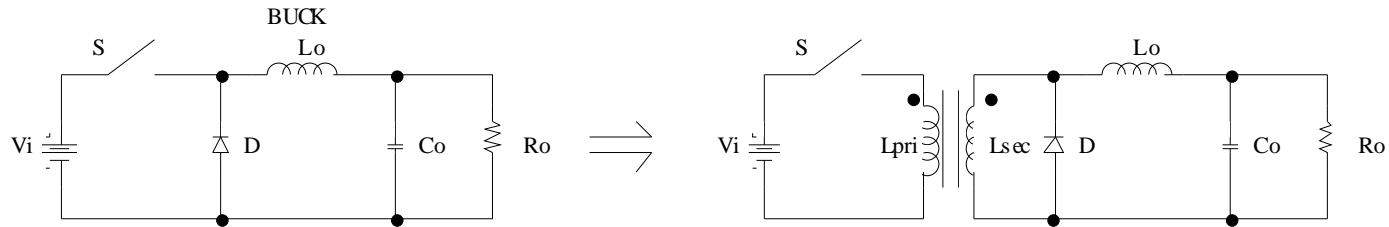
Ganho estático em função da razão cíclica:



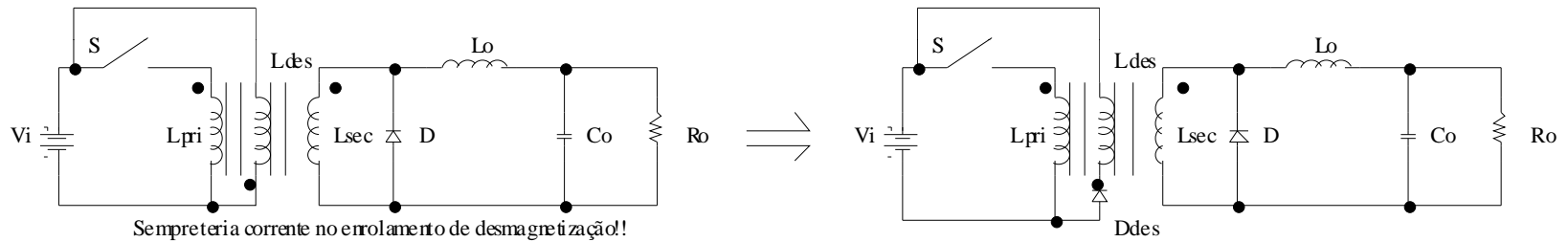
Converter Forward



Conversor Forward

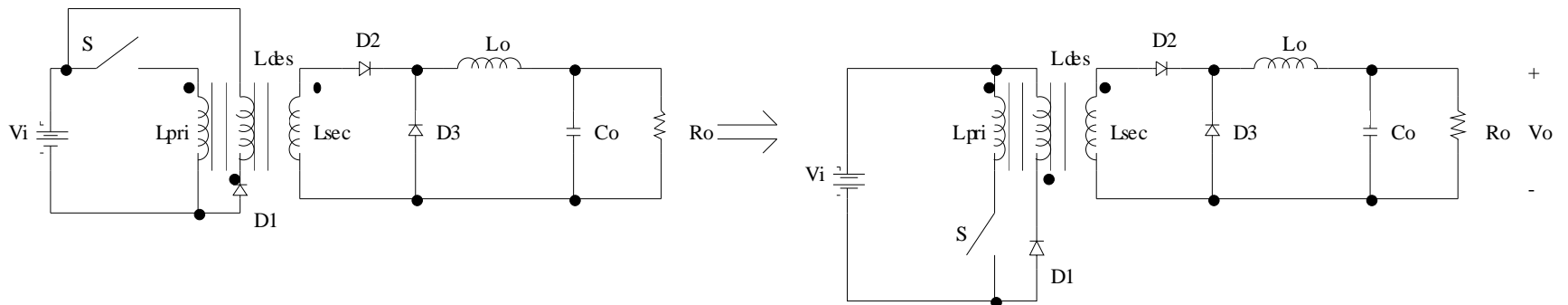


Como eliminar a energia armazenada devido à magnetizante??



Sempreteria corrente no enrolamento de desmagnetização!

No secundário circularia uma corrente por D!!



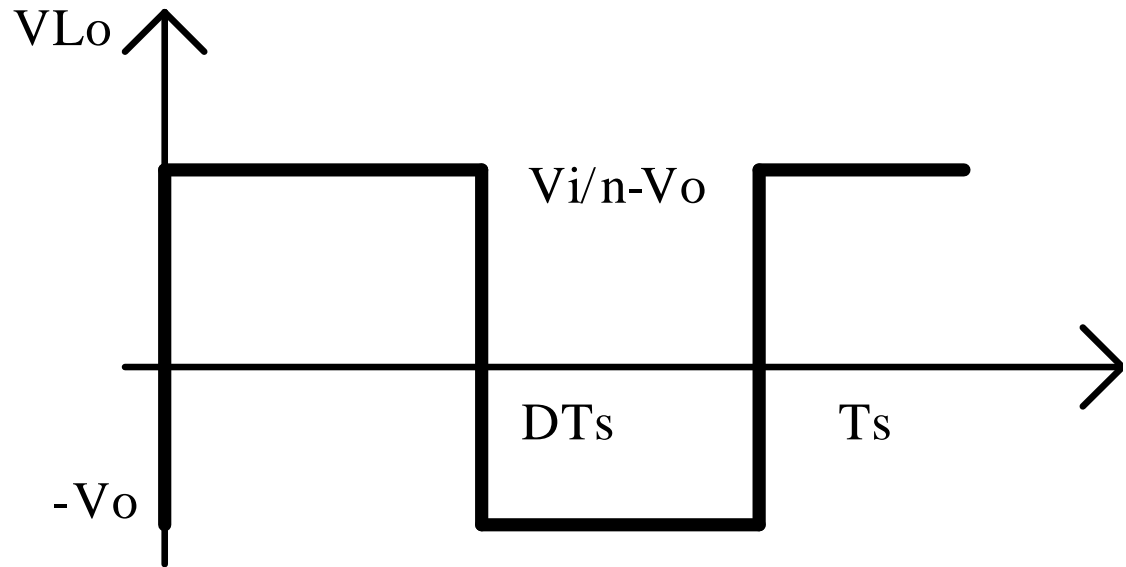
Converter Forward

$$\frac{1}{T_s} \int_0^{DT_s} \left(\frac{V_i}{n} - V_o \right) dt = \frac{1}{T_s} \int_0^{(1-D)T_s} V_o dt$$

$$\frac{n \cdot V_o}{V_i} = D$$

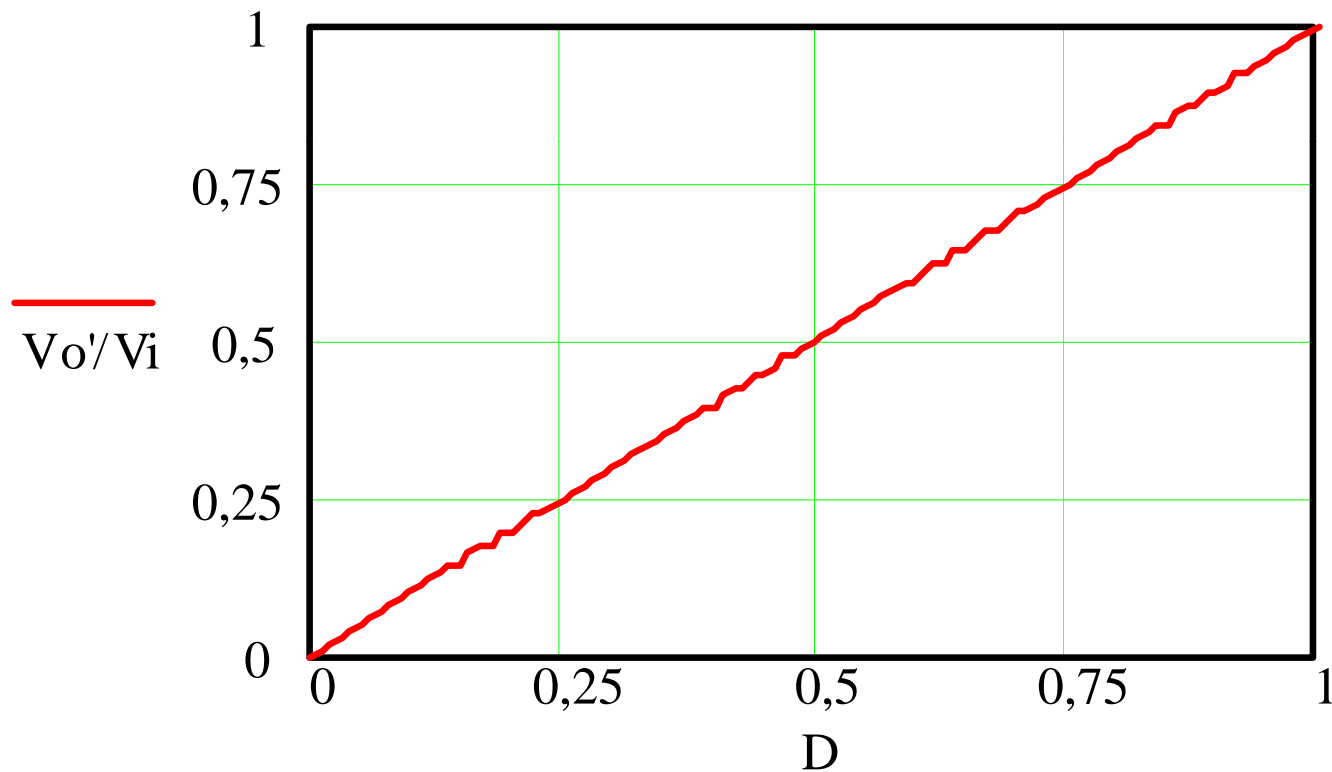
$$V'_o = n \cdot V_o$$

$$\frac{V'_o}{V_i} = D$$

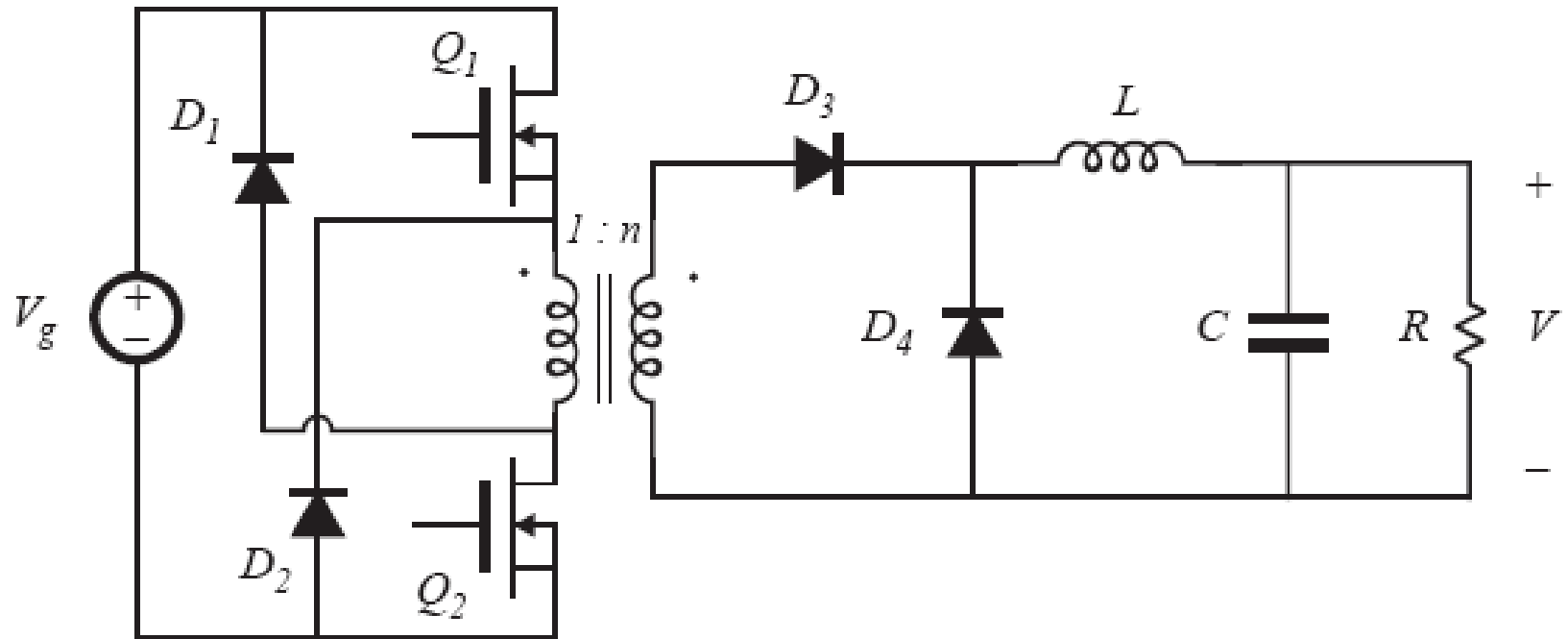


Conversor Forward

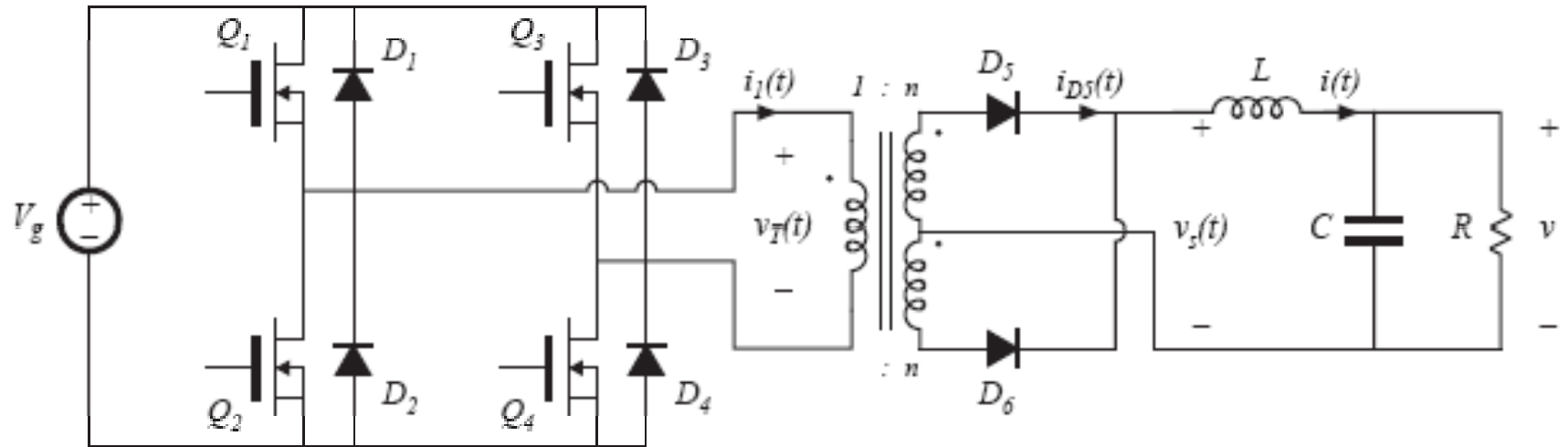
Ganho estático em função da razão cíclica:



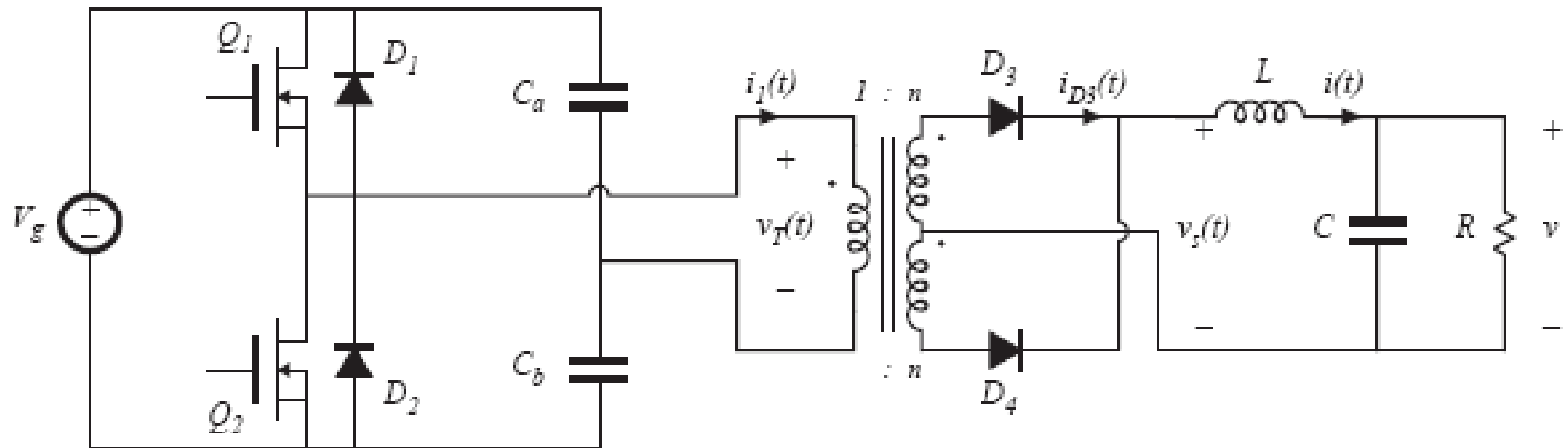
Conversor Forward com Dois Transistores



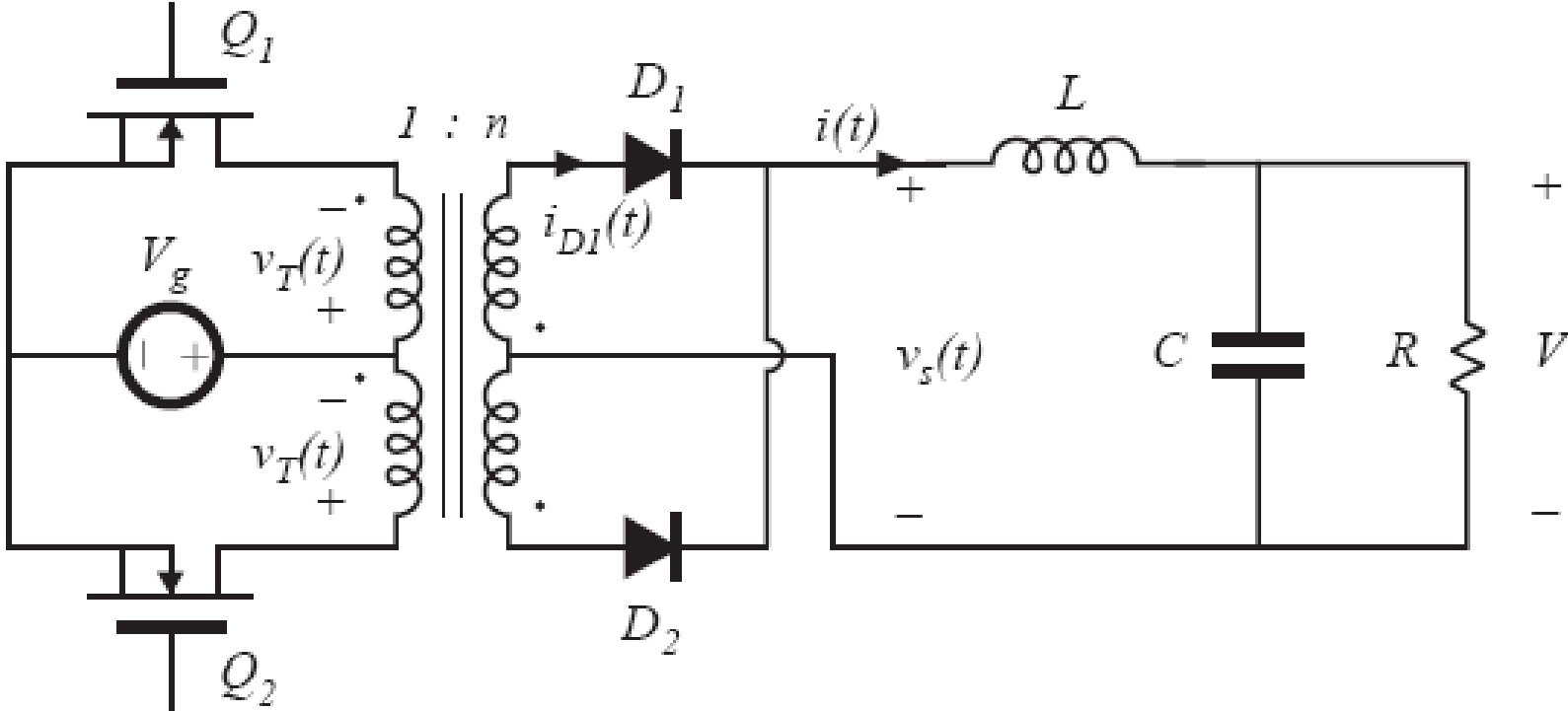
Conversor Ponte Completa Isolado



Conversor Meia Ponte Isolado



Converter Push-Pull



Próxima aula

Capítulo 10: Inversores

1. Introdução aos conversores CC-CA.

