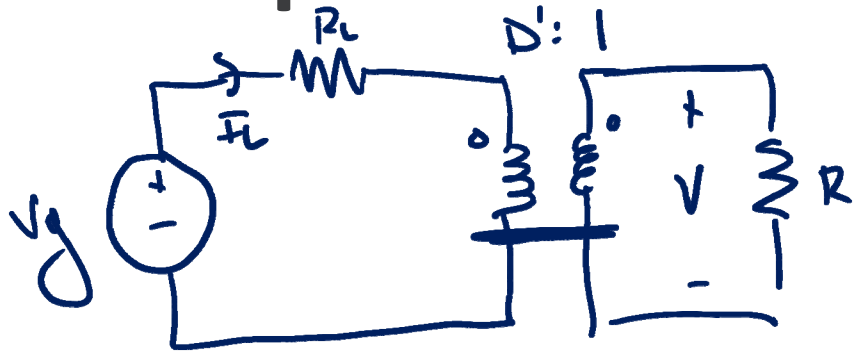
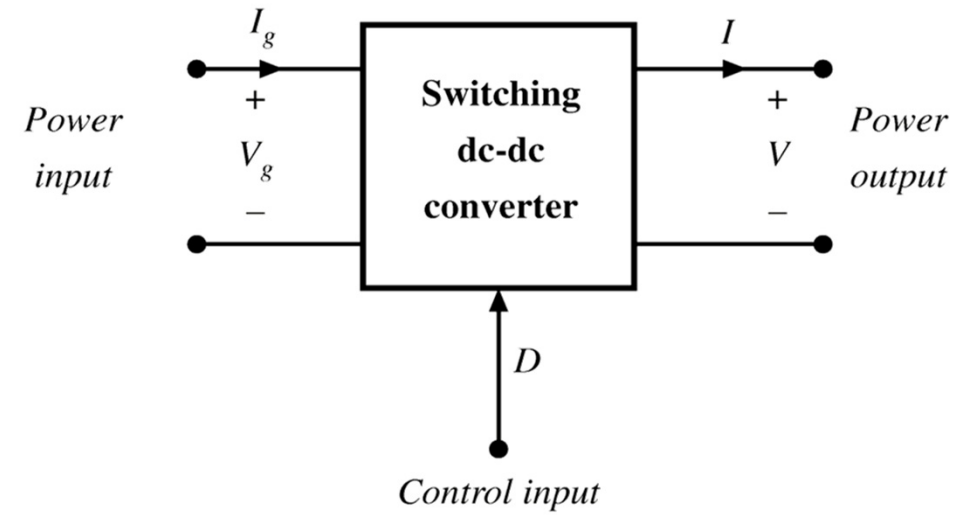


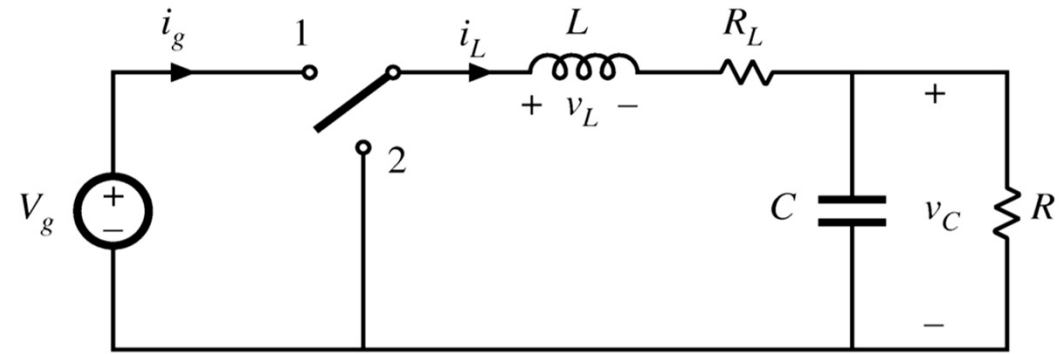
Boost Equivalent Circuit Model



The DC Transformer Model



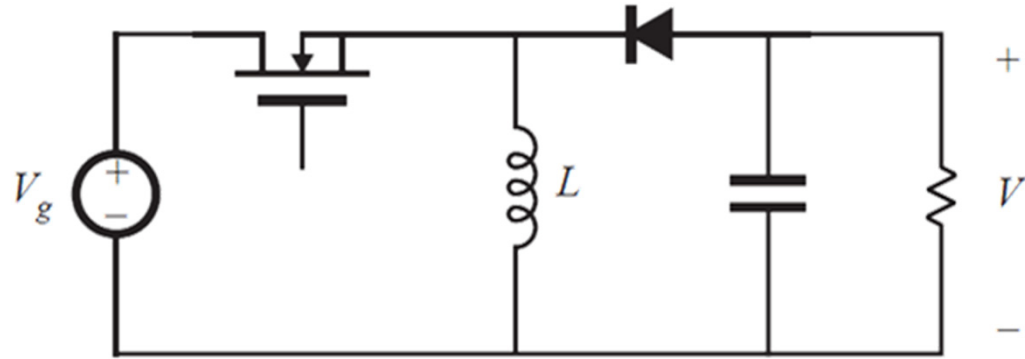
Buck Converter: Input Port Model



Input Port Equivalent Circuit

Semiconductor Conduction Loss Models

Buck-Boost Converter with Nonideal Semiconductors



Equivalent Circuit Model