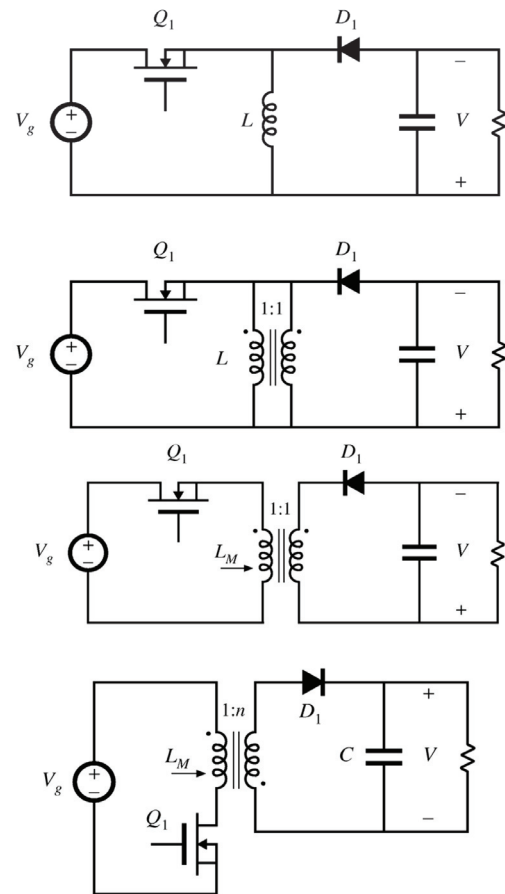
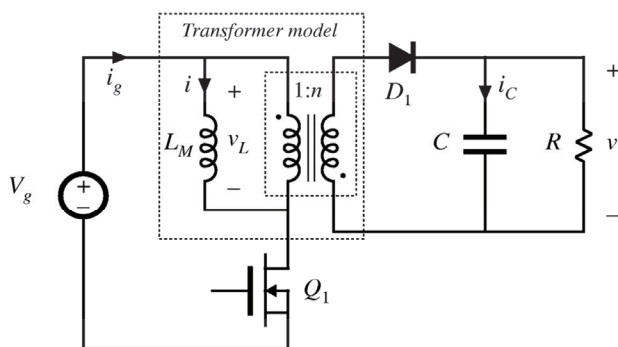


# Flyback Converter: Buck-Boost Derived

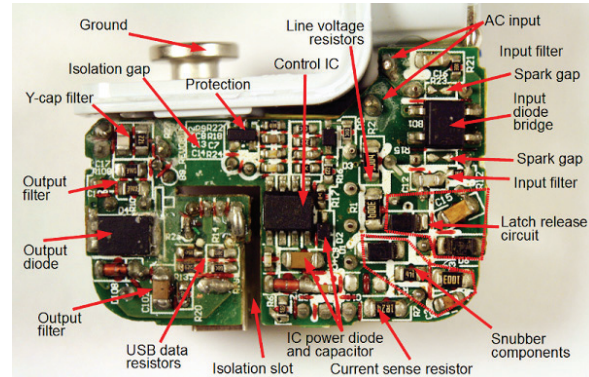
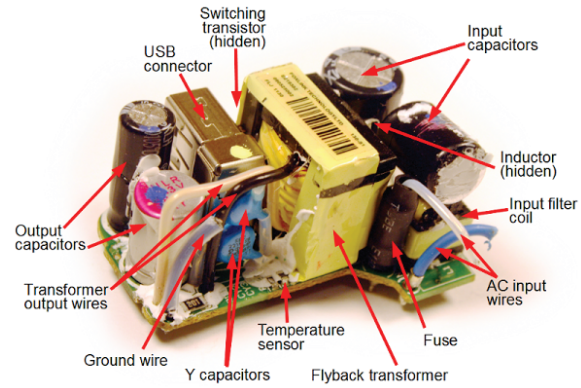


## Flyback Transformer



- A two-winding inductor
  - Symbol is same as transformer, but function differs significantly from ideal transformer
  - Energy is stored in magnetizing inductance
  - Magnetizing inductance is relatively small
- Current does not simultaneously flow in primary and secondary windings
  - Instantaneous winding voltages follow turns ratio
  - Instantaneous (and rms) winding currents do not follow turns ratio
  - Model as (small) magnetizing inductance in parallel with ideal transformer

# Flyback Application: iPad Charger



<http://www.righ.to.com/2014/05/a-look-inside-ipad-chargers-pricey.html>



## Flyback Off-Line Charger Application Circuit

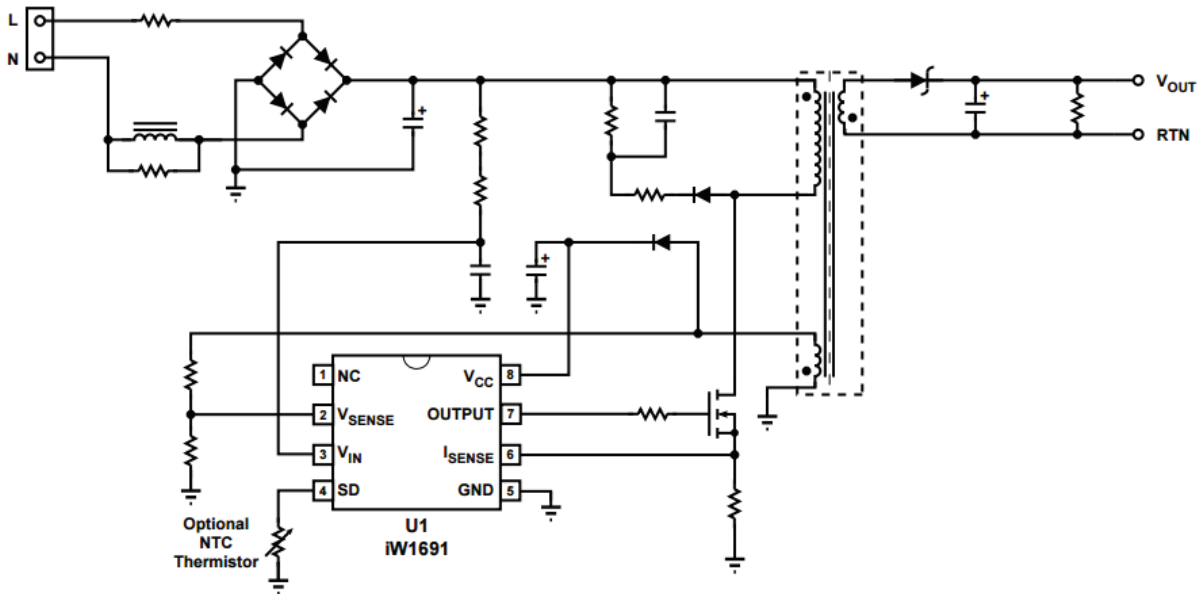
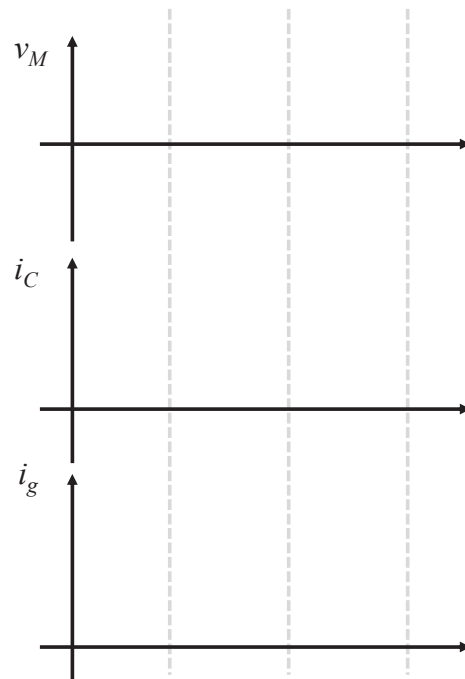
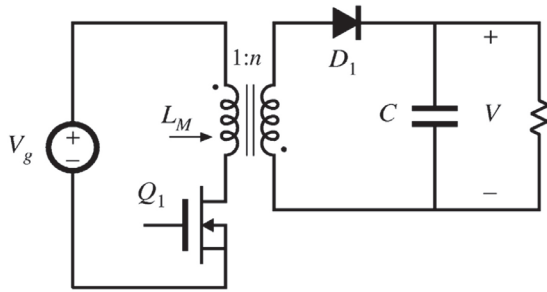


Figure 3.1 : Typical Application Circuit

<http://www.dialog-semiconductor.com/sites/default/files/iw1691-datasheet.pdf>

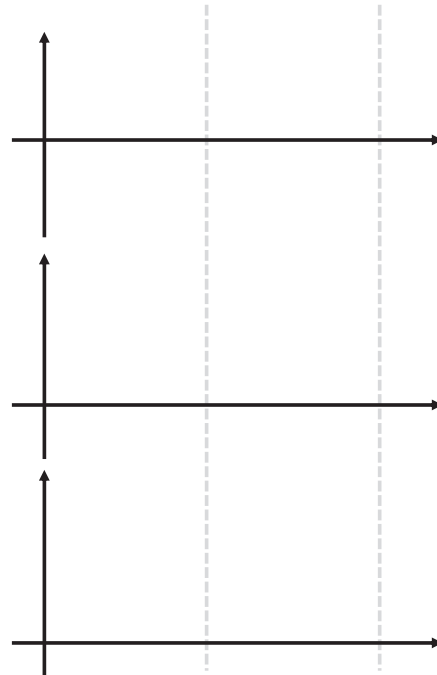
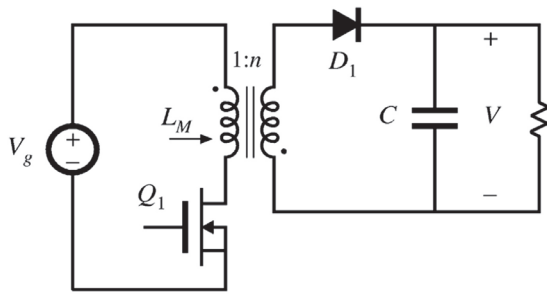


# Flyback Waveforms



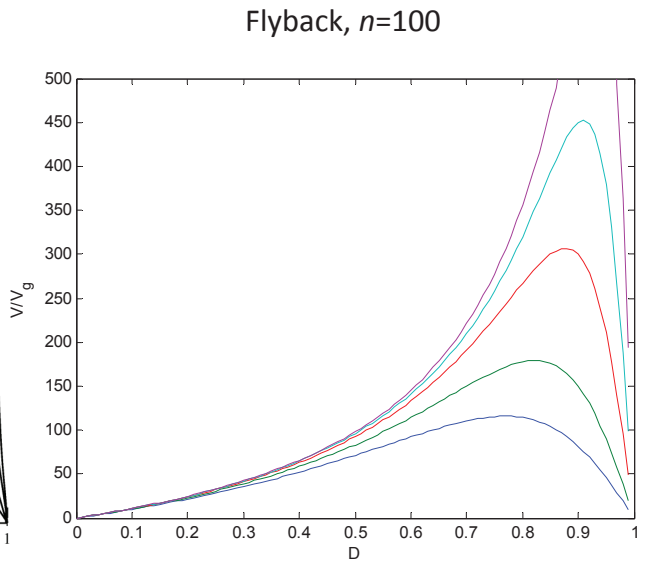
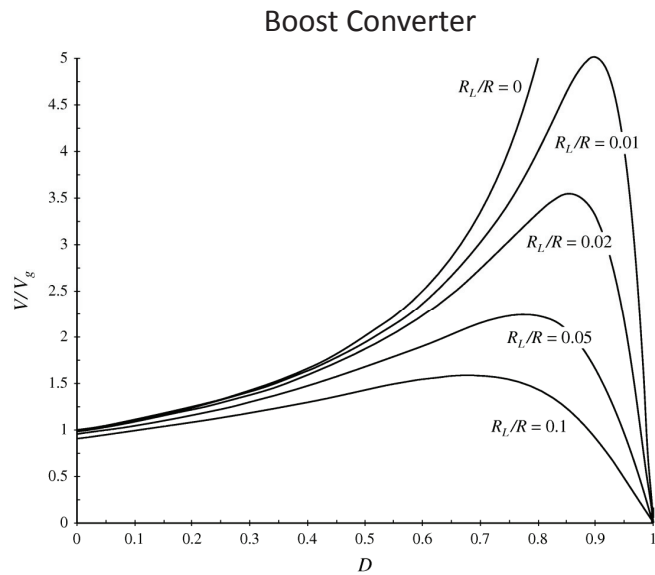
## Flyback Equivalent Circuit Model

# Flyback Reverse Recovery



## Flyback Equivalent Circuit Model

# High Step-Up Conversion Ratios



## Switch Ratings

