Topics

- Power supplies
- Linear regulator
- Boost converter- switch mode power supply

Notes:
1. Check off-
   - 2/19: Motor drive/stall, steering servo from battery, schematics due (+ part location rats nest- no copper)
   - PCB design due (Gerbers) Tues 2/23 midnight
2. 2/22 Quiz 3: switch mode power supply and regulator
3. CalDay Sat. April 16 @ UCB, Freescale Cup at UC Davis
``7.2V'' supply waveforms with motor PWM

- Battery model
- Waveforms on board
- Wiring to reduce voltage resistance effects of wiring

Linear Regulator $V_{IN} > V_{REG}$

Boost Converter $V_{IN} < V_{REG}$
Linear Regulator, e.g. KA378R05

LDO = low drop out
Caution: not all are low drop out
Typical Application

*Required if regulator is located far from power supply filter.

**C_{OUT} must be at least 22 \mu F to maintain stability. May be increased without bound to maintain regulation during transients. Locate as close as possible to the regulator. This capacitor must be rated over the same operating temperature range as the regulator and the ESR is critical; see curve.
Boost Converter - LT1370

Caution: ESR!
Need special cap
Boost Converter

Waveforms on board
(also see boost converter notes)