Snubber Diodes
Decoupling Capacitors
and
H-Bridges

Panel 1

Prior to Le04

Panel 2

NPN transistor
Quick Transistor review

Panel 3

NPN transistor
Think about the current ratio!

Panel 4

N-Channel
Decoupling Capacitor

A decoupling capacitor is a capacitor used to decouple one part of an electrical network (circuit) from another. Noise caused by other circuit elements is shunted through the capacitor reducing the effect they have on the rest of the circuit.

An alternative name is bypass capacitor as it is used to bypass the power supply or other high impedance component of a circuit.

Go back and add your capacitors!
Usually use two decoupling capacitors
1st Near my control chip (PIC or logic gate)
2nd Near my biggest culprit of inductive kick

Diode Snubber for an H-Bridge

Drive-Coast CW
Panel 17

Drive-Coast CCW

Panel 18

L293B

PUSH-PULL FOUR CHANNEL DRIVERS

- OUTPUT CURRENT 1A PER CHANNEL
- PEAK OUTPUT CURRENT 2A PER CHANNEL (non repeatable)
- INHIBIT FACILITY
- HIGH NOISE IMMUNITY
- SEPARATE LOGIC SUPPLY
- OVERTEMPERATURE PROTECTION

DESCRIPTION

The L293B and L293E are quad push-pull drivers capable of delivering output currents to 1A per channel. Each channel is controlled by a TTL-compatible logic input and each pair of drivers (a full bridge) is equipped with an inhibit input which turns off all four transistors. A separate supply is provided for the logic so that it may be run off a lower voltage to reduce dissipation.

Additionally, the L293E has external connection of sensing resistors, for switchmode control. The L293B and L293E are package in 16 and 20-pin plastic DIPs respectively, both use the four center pins to conduct heat to the printed circuit board.

Panel 19

The L293 H-Bridge

Don't forget your Decoupling capacitor!

Panel 20

Levels of defense against inductive kick!

1. 

2. 

3. 

4.
Panel 21

A look at the big picture

Inputs → Signal Conditioning → Control → Transistors → Outputs