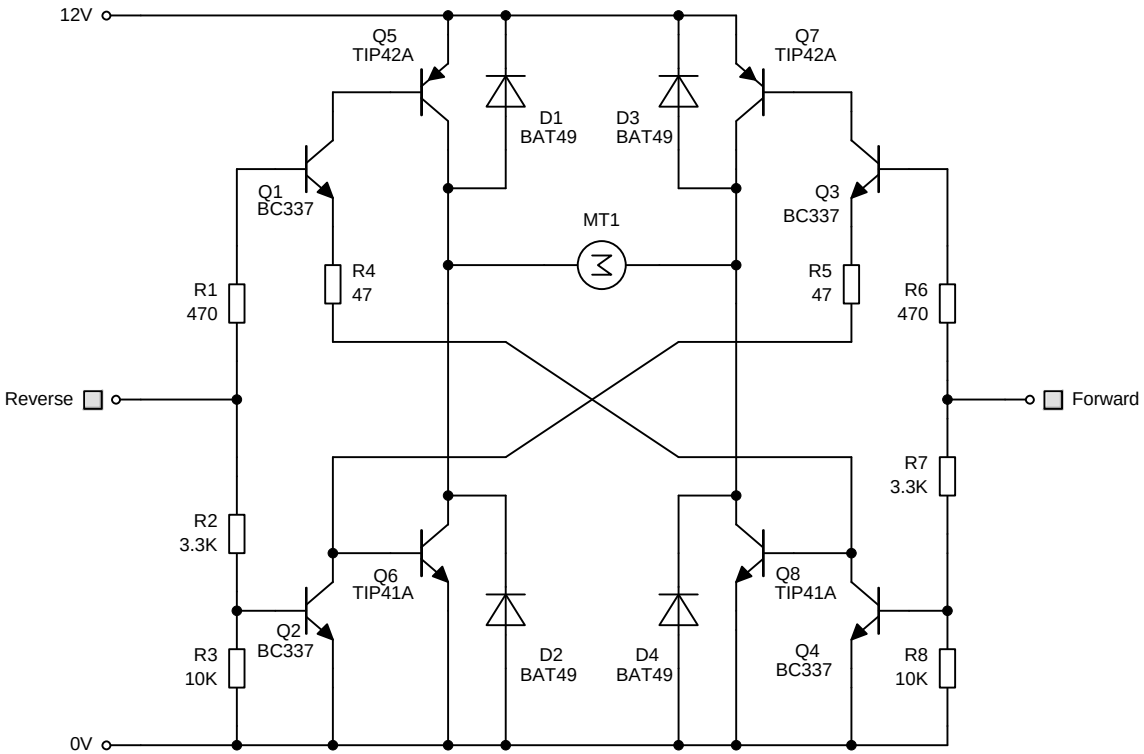
# FULL BRIDGE TRANSISTOR DRIVER CIRCUIT - BIPOLAR




This full bridge driver uses transistors to drive a motor in both directions. Ideal for use with PWM. It has in built protection to prevent all drive transistors switching on if both "Forward" and "Reverse" are activated at the same time. In this case the Motor will stop.
This circuit may seem a bit complicated but is essentially an H driver configuration. The problem is that if Q5 and Q6 are on together or Q7 and Q8, then a short will occur and destroy the transistors.In this case Q1 and Q3 provide drive for the PNP and also the opposing NPN transistors. When either input is activated, this drive is reduced to zero by either Q2 or Q4, thus at no time can a short occur.

The maximum drive current will depend on the transistors used for Q5-8. The ones shown should supply up to 3A if mounted on heatsinks. If more current is required, then using Darlington transistors for Q5-8 would be a better solution, such as TIP122 and TIP127 work well.

D1-4 are fast recovery diodes. These are essential to protect the transistors from back E.M/F. spikes produced by the motor. Take care with the polarity.

I don't claim design to this circuit and cannot remember where I found it, but it works well and is a good example of solid state design.