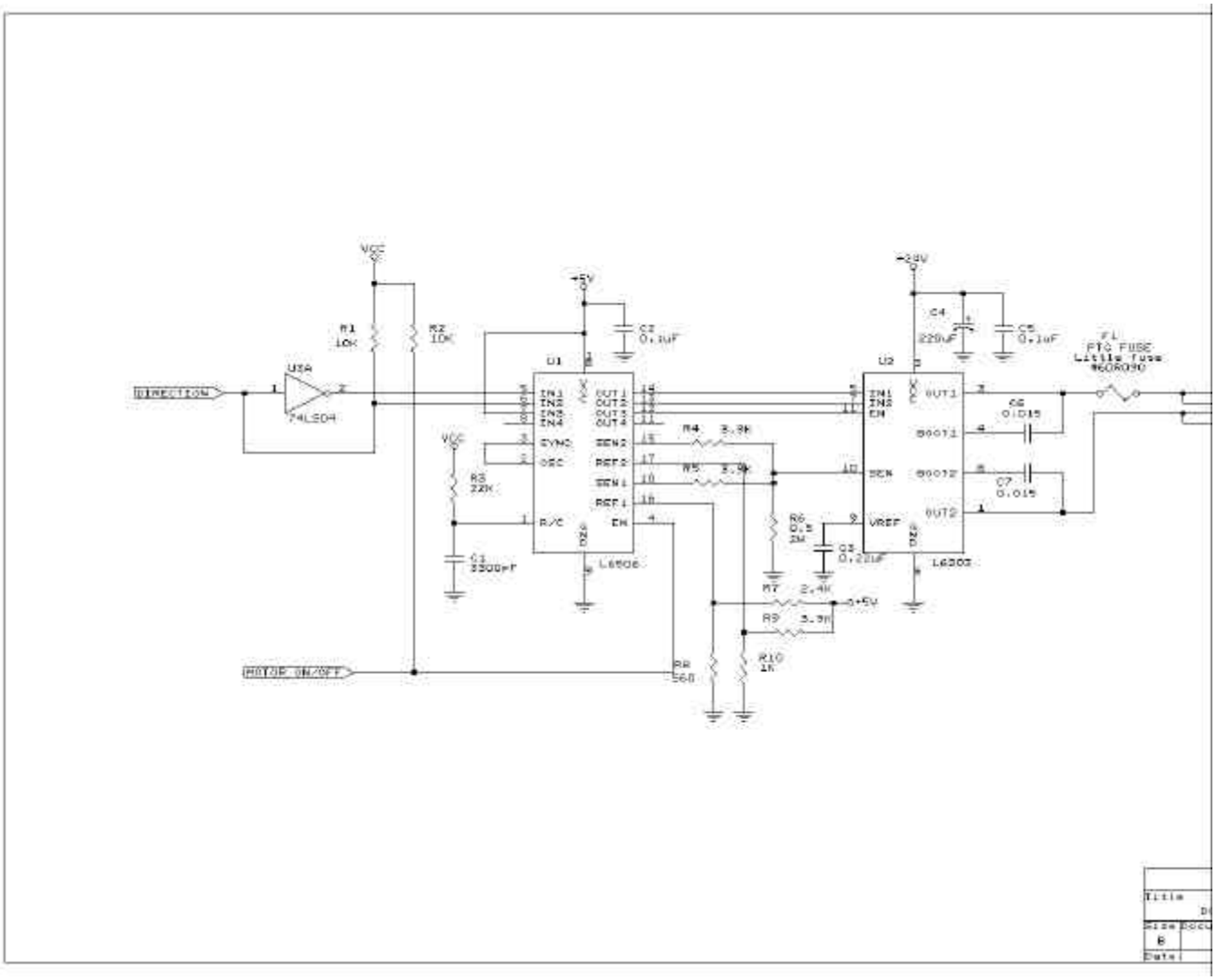

The L6203 is a DMOS full bridge driver, which can handle the high peak current up to 5A and supply voltage up to 48V with R_{DS} (ON) of just 0.3 ohm. The chip can run the motor at 4A continuous with proper heat sinking.

The above DC motor driver circuit is implemented with L6203 chip accompanied by a L6205 current controller. The current controller is used in this circuit as a pair of latching comparators. When the current through the motor reaches a level of approximately 1.57A (set by R7 and R8), the IC U1 (L6506) starts turning off and on the U2 (L6203) at 20KHZ to keep the current below 1.57A. This is similar to fixed off time PWM drive. If the motor stall, the current goes above the 2.0A (set by R9 and R10) then the second comparator channel will toggle the enable line of U2 to actually disable the driver, this limiter will also turn on and off at a frequency of 20KHZ. In case the motor is continuously stalled then when the F1 PTC reset-able fuse reaches it cutoff temperature, it will then turn off the current

to the motor to protect the chip from blowing out. With a 20KHZ chopping rate the maximum average running current is very close to 1.5A. It is suitable to most robotic or other applications using the medium size motor.