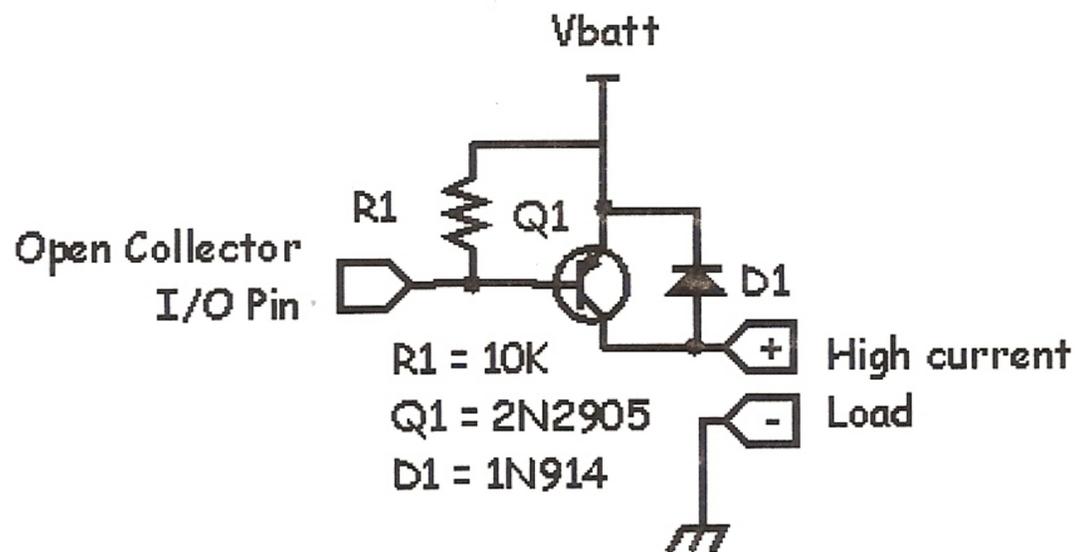


A simpler version of this circuit can be used if your I/O pins are "open collector" which means they are not internally tied to the Vcc pin of the microprocessor or I/O chip.



In this circuit the I/O pin directly connects to the base of Q1 (shown using a different transistor). When the I/O pin is low, current flows out of the base of the transistor to ground. Because the I/O pin can only sink a few mA of current, you need to adjust your

transistor accordingly. Shown is a 2N2907 which is the "sibling" of the 2N2222 but in PNP form rather than NPN form. This circuit can source about 500mA continuously and probably 1 to 1.5A for short bursts. You can source higher currents if you use a darlington power transistor like the TIP125. This will then source 3 to 5 amps!