



Notes:

Any B-class NPN transistor should work. Try BC847 (or BC547)
 The photo diode is made by Everlight and was the cheapest i could find.
 It is a surface mount diode which I soldered in a standing position.
 That way the optical fiber can easily be glued to the circuit board.
 If you choose a different diode you may need to to modify R2 where
 smaller R2 means higher threshold current. It is probably not necessary
 though, since the dark-current for many photo diodes is in the nA-range
 and thus well below the threshold.
 The values shown, gives a threshold current of about 8.5uA for
 a +/- 12 V supply. If you have a laptop, with lower voltage on
 the serial port, the current is lower, so you may need to reduce
 R2. This is probably not necessary though.

Function:

When the diode current is above 8.5uA, the circuit outputs
 the positive voltage supplied by RTS. Below, the negative voltage
 from DTR.

This circuit is simple enough to fit in a 9-pin DSUB connector and
 works flawlessly at 115200 bps with 1 meter (yard) plastic fiber with a
 Toslink transmitter (TOTX173) on the other end. You can use a much
 longer cable, say 5 - 10 meters, but I have not tested this myself.