

Re: Driving two transistors with same signal

Source: <http://sci.tech--archive.net/Archive/sci.electronics.basics/2008-05/msg00197.html>

- *From:* vic <news@xxxxxxxxxxxxxx>
- *Date:* Sat, 10 May 2008 03:58:30 +0200

BobW wrote:

"BobW" <nimby_NEEDSPAM@xxxxxxxxxxxxxx> wrote in message news:B7mdnSJSKb17P77VnZ2dnUVZ_obinZ2d@xxxxxxxxxxxxxx

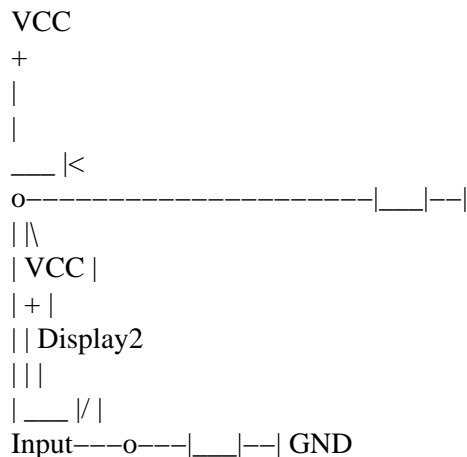
"vic" <news@xxxxxxxxxxxxxx> wrote in message [news:48233453\\$0\\$20289\\$426a74cc@xxxxxxxxxxxxxx](mailto:news:48233453$0$20289$426a74cc@xxxxxxxxxxxxxx)

Hi,

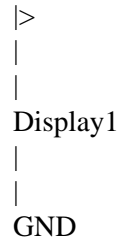
I have two common anode 7-segments displays, and only one wire to drive them. I need to achieve the following : when the control signal is +5V, display1 is ON and display2 is OFF. When the signal is 0V, display1 is OFF and display2 is ON. When the signal is not connected (high impedance), both displays are OFF.

I tried using a NPN transistor for display1 and a PNP for display2, connecting their bases together. It works when the driving signal is present, but when the signal is floating current flows from the base of the PNP to the base of the NPN and both transistors turn each other on, resulting in both displays being ON.

The circuit that didn't work :



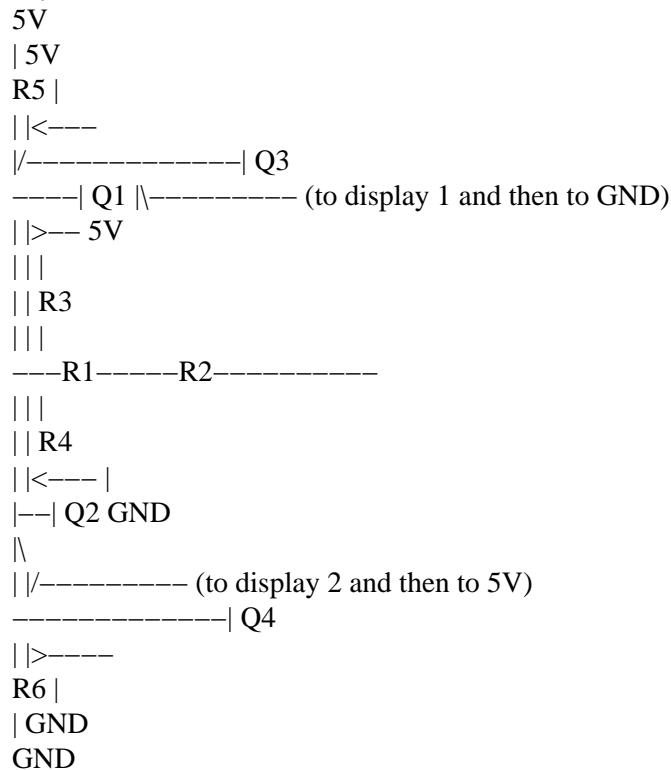
Re: Driving two transistors with same signal



Is there a way to achieve this ?

Thanks.

Try this:



Q1 and Q2 form a comparator so that when the input is floating they will both be off. R3 and R4 set the input threshold.

When the input is high (5V) then Q1 will be on and that will turn on Q3. When the input is low (GND) then Q2 will be on and that will turn on Q4.

You can figure out the resistor values. They shouldn't be too critical, but R3 and R4 need to be small enough to ensure enough drive for the four transistors.

I hope I got the ascii art right as I had to compose it in a separate word processor.

Re: Driving two transistors with same signal

Bob

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== NOTE: I automatically delete all Google Group posts due to uncontrolled SPAM ==

I see, now, that your displays are both common anode. You'll need to add another PNP (common emitter mode) driven by Q4.

As Monica Lewinsky used to say, "Close, but no cigar."

Bob

gasp 5 transistors needed to do what seemed simple at first glance ...

I don't quite understand what R5 and R6 are for, when Q1 and Q2 do not conduct, the base current of Q3 and Q4 would be zero so the resistors do not seem necessary ?

Well I guess I could just try it and see if it works :)

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