

Re: Need help building a split voltage supply

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Date: Fri, 27 Aug 2004 06:48:15 GMT

"JoJo" <N@NE.nothing> wrote in message
news:6mwXc.111166\$4h7.15647526@twister.nyc.rr.com...
>
>
> *I tried 3 4001 in series and a 1K both as a load across the 5V and*
> *in series*
> *with the diodes.*
>
> *3 diodes in series – 1K as load = 4.36V (same reading using 4 diodes*
> *too)*
> *3 diodes in series – 1K in series =4.75V*
>
>

Here is some information that might be helpful, some of which you might already know.

(please view in courier font)

On real schematics, the symbol for a diode is a filled in black arrow with a line on the point. The line on the diagram corresponds to the line on the actual diode. This is an ascii equivalent:

->|-

Current flows in the direction of the arrow, from left to right, when you put voltage across it.

This is the ascii symbol for a resistor:

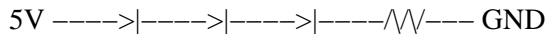
--^v---

Series means end to end, whereas parallel means all ends tied together.

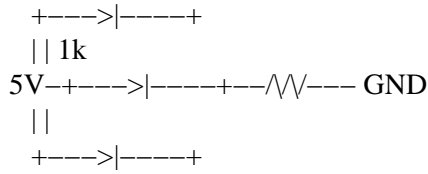
Series:

1k

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Parallel:

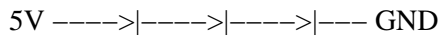


If you put them in series, then the voltage across the resistor shown will be about 2.9V. Replacing the resistor with your circuit that requires 3V is what the original responder was saying.

If you put them in parallel, then the voltage across the resistor will be about 4.3V. This is probably not what you want, cause it doesn't drop the voltage to near 3 volts for the remainder of the series elements.

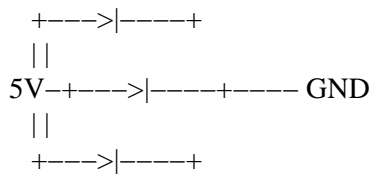
If you don't have a series resistor, like this

Series:



or

Parallel:



then you are shorting out your 5V supply, and probably pulling the supply down to 4.75 by trying to suck far too much current through it. Don't do this, you will burn out your power supply and fry your diodes. You should always have a resistor, or something that provides resistance between the 5V and GND terminals.

One other thing, a Zener diode is a special diode, which is used reversed from the usual orientation (the line points to the positive side.) It works by preventing current from flowing until a voltage threshold is reached, and then allowing allowing a virtual short above that. If you put it in series with a resistor, and put more voltage across it than the voltage rating of the zener, the voltage across the zener will be approximately the voltage limit, and the voltage across the resistor will be whatever is left over, that is, $V+ - V- - Vzener$.

Hope this helps!

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Regards,
Bob Monsen