


Re: Need help building a split voltage supply

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From: JoJo (*N_at_NE.nothing*)

Date: 08/27/04

Date: Fri, 27 Aug 2004 11:30:44 -0400

"Robert C Monsen" <rcsurname@comcast.net> wrote in message
news:OOAXc.52818\$9d6.20002@attbi_s54...
>
> "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:*
>
> -----
>
> *Series means end to end, whereas parallel means all ends tied*
> *together.*

>
> *Series:*
> *1k*
> 5V ----->|----->|----->|----- \diagdown ----- GND
>
> *Parallel:*
>
> +---->|-----+
> || *1k*
> 5V-+---->|-----+--- \diagdown ----- GND
> ||
> +---->|-----+
>
> *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:*
>
> 5V ----->|----->|----->|----- GND
>
> *or*
>
> *Parallel:*
>
> +---->|-----+
> ||
> 5V-+---->|-----+----- GND
> ||
> +---->|-----+
>
> *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*

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> *the resistor will be whatever is left over, that is, $V_+ - V_- - V_{zener}$.*

>

> *Hope this helps!*

>

> *Regards,*

> *Bob Monsen*

>

>

Thanks for clarifying, worked like a charm :-)