

# Re: Paralleling FETS

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*Source:* <http://sci.tech-archive.net/Archive/sci.electronics.basics/2008-10/msg00478.html>

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- *From:* "Paul E. Schoen" <pstech@xxxxxxxx>
  - *Date:* Thu, 16 Oct 2008 04:05:43 -0400
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"Hammy" <spamme@xxxxxxxx> wrote in message  
<news:3vmbf4hj9sqv49u0eop8uhf1ma9c9mi21r@xxxxxxxx>

On Wed, 15 Oct 2008 06:13:57 -0500, "Jon Slaughter"  
<Jon\_Slaughter@xxxxxxxx> wrote:

Google is very easy to use:

<http://www.sampson-jeff.com/tcrobowar/motor1/para.htm>

<http://www.irf.com/technical-info/appnotes/an-941.pdf>

<http://www.microsemi.com/micnotes/APT0402.pdf>

[http://www.powerdesigners.com/InfoWeb/design\\_center/articles/MOSFETs/mosfets.shtm](http://www.powerdesigners.com/InfoWeb/design_center/articles/MOSFETs/mosfets.shtm)

<http://www.fairchildsemi.com/an/AN/AN-558.pdf>

Yes I know I've already read all that and similar stuff in textbooks.

If you want to get anal about it every question posed here as well as SED could be answered by reading a book are googleing.

I post here to ask for practical advice i.e someone who actually has experience doing circuit design and could maybe share insight. A category which excludes you.

There was a lengthy thread about parallel MOSFETs last December. I did an LTspice simulation, which showed good current sharing among several devices, and when Phil freaked out about it, I did an actual breadboard experiment that proved it works for real devices:

Re: Paralleling FETS

<http://groups.google.com/group/sci.electronics.design/msg/c64478c824397da8>

Essentially, the results were as follows:

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So I did an experiment. I connected four MOSFETs, HUF75645P, 100V, 75A, 310W, 0.014 ohm. Sources to GND. Gates tied together, through 100 ohms to a pot across 10 VDC supply. Each drain to a 100 ohm resistor and a red LED to +10 VDC.

Vgs: 2.50 2.60 2.73 2.86 3.00 3.20 3.50

Vd(1) 8.80 8.75 8.60 8.48 7.95 3.43 0.016  
Vd(2) 8.80 8.76 8.62 8.51 8.15 4.56 0.018  
Vd(3) 8.76 8.72 8.58 8.45 7.93 2.95 0.015  
Vd(4) 8.79 8.76 8.63 8.53 8.21 5.40 0.020

LEDs were all about equal brightness and were barely lit at 2.73V and fairly bright at 3.00V to 3.20V.

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When called to task about the low current used for this test, I redid the experiment:

<http://groups.google.com/group/sci.electronics.design/msg/da059ef9c84d05fa?dmode=source>

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OK. I changed the circuit to source follower. Devices 1, 2, and 3 are connected through 12 ohm 10 watt resistors to GND, device 4 has a 100 ohm to GND. All drains connected to a 10 VDC supply. Gates in parallel through 100 ohms to a pot across the supply. Results:

Vg: 5.00 6.00 7.00 7.50 8.00 9.00 10.0 7.50(cold)

Vs(1) 2.25 3.13 4.11 4.65 5.13 6.12 7.11 4.53  
Vs(2) 2.31 3.23 4.09 4.73 5.20 6.16 7.18 4.60  
Vs(3) 2.18 3.12 4.09 4.60 5.09 6.07 7.06 4.27  
Vs(4) 2.26 3.20 4.17 4.67 5.03 6.16 7.16 4.66

Paul

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