

## Re: MOSFET GOT XTREMELY HOT

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- *From:* Terry Given <my\_name@xxxxxxx>
  - *Date:* Mon, 12 May 2008 10:07:21 +1200
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Eeyore wrote:

bigcaboy@xxxxxxx wrote:

1k in series with or parallel with "-" ? and 104 makes an "integrator"? what's the purpose? to make a pole? could you give me more details how to get those numbers?

In series – so the impedance "seen" looking back from the –ve input is ~ 1k, rather than ~ 1 Ohm

and BTW 104 = 100nF, not 10nF

in practice you will find that almost any cap above about 100pF will suffice to stabilise the loop. larger caps will slow your overall response.

There is nothing wrong with experimentation here; start with 100nF, and keep reducing the cap until it oscillates again. Then pick a cap about 5x larger than the cap that made it oscillate.

Or go study up on poles, zeros and loop compensation, and calculate the cap required to give you a 60 degree phase margin.

This is how I compensate loops: If it is one I have analysed before, I dig up my last analysis then directly calculate my loop compensation components (I've done a lot of flyback & forward converters).

If it is a circuit I havent analysed, I decide whether or not to analyse it or do it empirically – this is based on factors like the amount of time I have to get a prototype up and running, whether or not I will need to design such a circuit again (if not then dont bother) etc.

Regardless, I work out the form my loop compensation components will take (I do all SMT stuff, so its easier to place components I dont end up using) and draw them into the circuit, often using "TBD" for the values. For a circuit like this I would have used 1nF & 1k as a "guess" that I expect will work just fine.

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Then I build it, and measure its behaviour (bang it and see how it wiggles), adjusting as necessary.

Why not just take the advice from experts instead of making yourself look like an idiot ?

Graham

<snigger>

Cheers  
Terry

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