Switcher psu woes

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Hi,
Sometimes I think everythings against me,
I decided to use the lm2727 synchronous smps controller for a cool runing regulator,
(10−15v input 1.5A variable output)
however it has undervoltage lockout not just on the input as I though but on the output,
when the output drops below a certain point it actualy latches off and shorts out the output,
wich means its very sensitive to sudden load changes,
the lm2737 doesnt have the latch off feature but doesnt seem to be stocked by my suppliers,
I managed to disable this feature with a diode clamp but now I find it disipates a considerable amount of heat when no load,
it seems the synchronous rectifier lower mosfet remains on and conducts in the unwanted direction sinking current from the output, this 'feature' is described as source+sink capability.

As if that isnt enough after several blown top side mosfets I finally realised the gate voltage was being driven to 0v before the source had droped to 0v, with close to the maximum 16v input voltage this meant there was −15v vgs wich is more than it can stand, although it was only for about 20ns. a gate resistor got rid of this but made it too slow, there seems to be very little dead time, a diode vgs clamp proved better.

There is another chip tsp4005x with more pins wich is why I didnt chose it originaly but is available with or without the 'sink' feature but gues what my supplier only stocks it with the option, however it does apear that it drives the top mosfet gate to vs rather than 0v

Not to mention my dual mosfet tssop−8 pmwd18un actually turned out to be common drain instead of a dual pair wich wasnt mentioned on the catalogue page and I didnt look long enough at the data sheet.

The final thing is that with the paralelled tssop−8 devices wich gives an rdson of ~10m ohm they seem to dissipate more power than some spare stn3nf06l 0.1 ohm mosfets I had, is this due to the particularly low gate threshold perhaps, or are those tiny packages realy not able to take the current ?

Fortunatly the rest of the circuits on the board seemed to work ok.

Colin =^.^=

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