

MOSFET current control circuit for a Hydrogen generator system 1.0

There is a multitude of circuits available online that describes the use of MOSFETS as current control circuitry

Currently HHO experimenters primarily use a circuit known as a PWM power supply to control the current used in the circuit and are taken advantage of so called experts who say that the square wave generator is the only way to go in current control.

True, the square wave generator is the only way to go in current control for an inductive circuit such as a DC motor, but this is not an inductive circuit, but rather an electrolysis circuit that does not suffer the effects of back voltage that reduces the efficiency of the DC motor

Secondly there is the common suggestion that the square wave generator is forcing extra gas production using the resonant frequency of water..... basically a blatant lie.

The resonant frequency of water is many gigahertz, ... not kilohertz as the PWM circuit produces.

A PWM circuit uses a switching circuit that consumes large amounts of electrical energy as is evidenced by the huge heat sinks used and the large amounts of heat dissipated - energy that could be better used in gas production.

Simply the HHO "experts" have no knowledge of electrowinning circuits or electrochemistry and are simply grabbing the easiest way of controlling the current flow using a commercial (expensive) PWM circuit.

We have been testing simple MOSFET circuits over the past 3 months and have found they are reliable, effective in controlling the current flow and functional over a range of voltages, unlike the PWM circuits. They consume little electrical energy and require a minimal number of electronic components, therefore reducing the possibility of failure of the power control circuit.

The only disadvantage is that it requires you, the consumer, to manufacture / assemble the power control circuit using a soldering iron and preferably using "Silver solder" for greater reliability.

In the space below , I document a simple MOSFET circuit that can be used as a DC motor control circuit along with the parts required – if you wish to continues to use this method of current control

<http://www.vishay.com/docs/70596/70596.pdf>

In this circuit the MOSFET will behave as a simple on/off over-current switch rather than as a current limit control which limits the maximum current. A current limiter works by dropping voltage across the mosfet and dissipating the power as heat. If you current limit at 30A and drop just 1V across the mosfet you have 30W of heat to get rid of. That needs a big heatsink. You then have to add extra protection circuitry around the mosfet to protect it against over temperature, which is getting complicated. An over-current trip is easier to implement. Even easier is a simple resettable fuse

In the next post I have listed the parts I used in manufacture of the control unit, along with a simple circuit diagram for a MOSFET circuit used in HYDROGEN gas production