Setting to 12V – results in 500mA for magnet

* Logic LOW is when magnet is on – due to switch being open (should remember for programming)
* Should get a heatsink for MOSFET because it gets hawt

First:

Used just a MOSFET, and couldn’t get it working – because no pull down resistor so floating pin

* Needed at least a pull up resistor or current limiting resistor for MOSFET

Then:

Added flyback diode (1N4007) as a schottkey flyback to protect from emf spikes

Added a bjt transistor to step up 3.3V logic level from MCU to 5V – 3.3V wasn’t enough to turn on the MOSFET.

Tried different voltages to drive MOSFETs.

Higher MOSFET driving votlage means a strong magnet pull but pulls more current

|  |  |
| --- | --- |
| MOSFET voltage | Current draw |
| 12V | 530mA |
| 9V | 420mA |
| 7V | 330mA |
| 5V | 250mA |
| <5V | Weak pull on magnet |

Could use a voltage divider to control the current drawn – can adjust and swap these resistor values if we want to change current drawn.

* Solenoid is meant to work properly at 12V – so shall keep

<http://tinyurl.com/yudysefc> --- for magnet driver circuit

FET: IRF620

BJT: BC547

Diode: Schottkey (1N4007)