



## Gravity: MOSFET Power Controller SKU: DFR0457



### Introduction

In most Arduino projects, relays are the first choice to drive some large current device. It requires a certain amount of current to drive the internal coil to pick-up contact. But for some MCU, like Intel Edison, Intel Joule, LilyPad, Raspberry Pi and other microcontroller with limited amount of current GPIO, it's hard to drive one or more relays simultaneously.

The MOSFET power controller is a module which can drive a large current device with limited current GPIO. It works as a MOSFET relay or MOSFET driver. When you give it a digital high-level signal (3.3~10V), MOSFET turns on, vice versa.

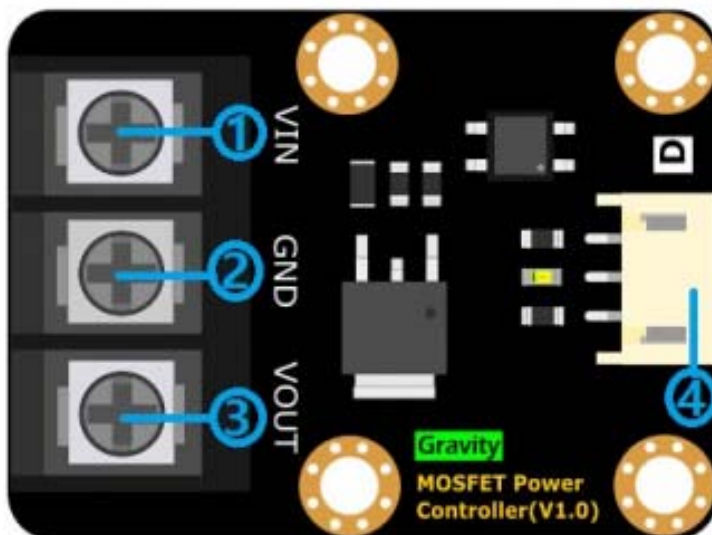
Compare to the relay module, MOSFET power controller is compatible with Arduino Raspberry Pi, LattePanda and other Microcontroller, supports 3.3~10V logic power control. The VIN port supports 5~36V; 0~20A power input, if the current is over 10A, we recommend an external heat sink. And MOSFET supports quick ON-OFF switch, the switching frequency arrives 1KHz. That is a good point for robot control.

The MOSFET power controller comes with a standard PH2.0-3P gravity interface. It makes the module compatible with the Arduino IO expansion shield. Plug and play, easy to use.

## Specification

- VIN Operating Voltage: 5V-36V DC
- VIN Operating Current: 0A-20A (Suggest external heat sink when the current over 10A )
- Logic Operating Voltage: 3.3~10V DC
- Logic Control Signal: 3.3~10V DC
- Switching Frequency: 0-1KHz
- Switching Character: T(on)=20us/T(off)=50us
- Operating Temperature: -55°C-155°C
- Interface Type: PH2.0-3P
- Dimension: 44\*32 mm/ 1.73\*1.26 inches

## Board Overview



Num	Name	Description
1	VIN	Power Input (DC:5~36V)
2	GND	GND
3	VOUT	Power Output
4	PH2.0-3Pin	Gravity Interface

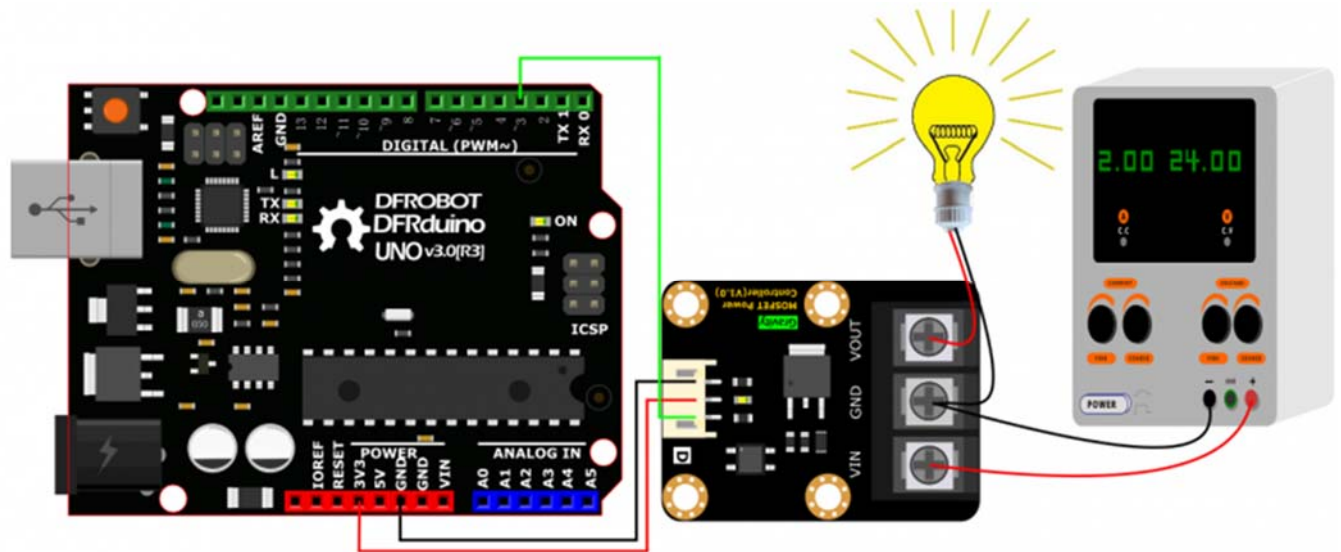
## Tutorial

This tutorial demonstrates the module usage. It could be finished in 10 minutes

### Requirements

- **Hardware**
  - DFRduino UNO x 1
  - MOSFET Power Controller x1
  - 24V DC Lamp x1
  - DC power supply x1
  - M-M/F-M/F-F Jumper wires
- **Software**
  - Arduino IDE, Click to Download Arduino IDE from Arduino®  
<https://www.arduino.cc/en/Main/Software>

### Connection Diagram



MOSFET Power Controller Connection Diagram

## Sample Code

```
/*
 * @DFRobot
 * @author Hudianjiang
 * @version V1.0
 * @date 2016-8-30
 */
const int LampControl=3; //define var
void setup() {
  pinMode(LampControl,OUTPUT); // Set pinMode
}
void loop() {
  digitalWrite(LampControl,HIGH);//Light up lamp 2s
  delay(2000);
  digitalWrite(LampControl,LOW);//Turn off lamp 2s
  delay(2000);
}
```

## Expected Results

The lamp will blink like led (Actually I'm not suggest you to do so, it will reduce the service life.)