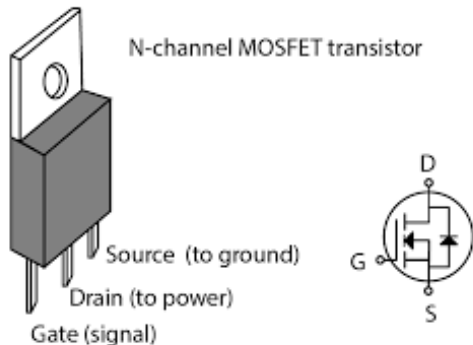


Everything You Need to Know About MOSFET (IRLB8748PBF)

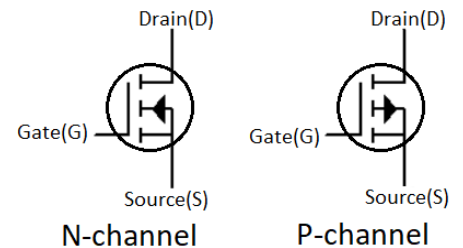


IRLB8748PBF SPECS		
Drain-to-Source Voltage	Max	30V
Gate-to-Source Voltage	Max	±20V
Threshold Voltage	Typical	1.8V
	Min	1.35V
	Max	2.35V
Continuous Drain Current	Max	65A
Continuous Current Temperature (Based on PSC Testing)	10A	40°C
	20A	80°C

What are MOSFET's good for?

- MOSFET's are most commonly used as an electronic switch.
- They can also be used to control the voltage (speed) of a DC motor using a PWM (or analog voltage) as shown in wiring example below.

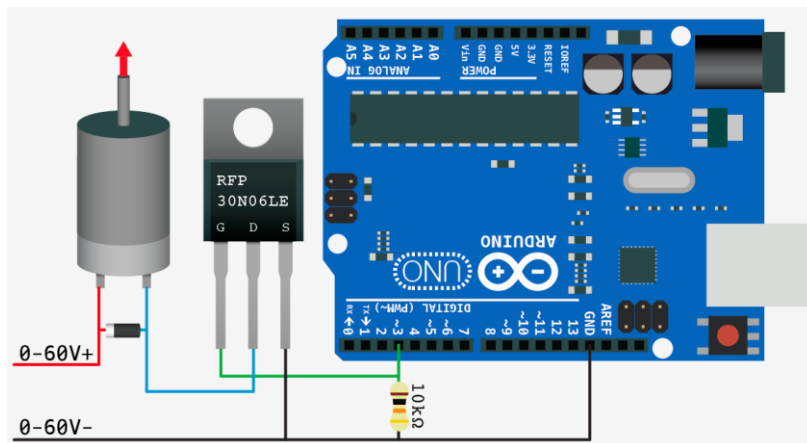
A MOSFET is a type of transistor, which allows current to flow or not to flow depending on the voltage on its pins. There are two types of MOSFETS, P and N types. A P type MOSFET allows current to flow from the drain to source pins if $V_{gate} < V_{source} - V_{threshold}$, whereas an N type MOSFET allows current to flow from the drain to source pins if $V_{gate} > V_{source} + V_{threshold}$.



While MOSFETS work best as on/off switches, they do have a limited range where they can constrict current. This occurs when $V_{gate} \sim V_{source} - V_{threshold}$ (P type) or $V_{gate} \sim V_{source} + V_{threshold}$ (N type).

The Project Support Center only stocks N type MOSFETS. When using an N type MOSFET, the Source pin should almost always be connected to ground.

Wiring Schematic Example:



The 10k resistor is used to pull the circuit to ground when there is no signal from the Arduino (use a resistor value greater than or equal to 10k). When using a MOSFET with a motor or other inductor, make sure to use a flyback diode to protect the MOSFET from current surges.