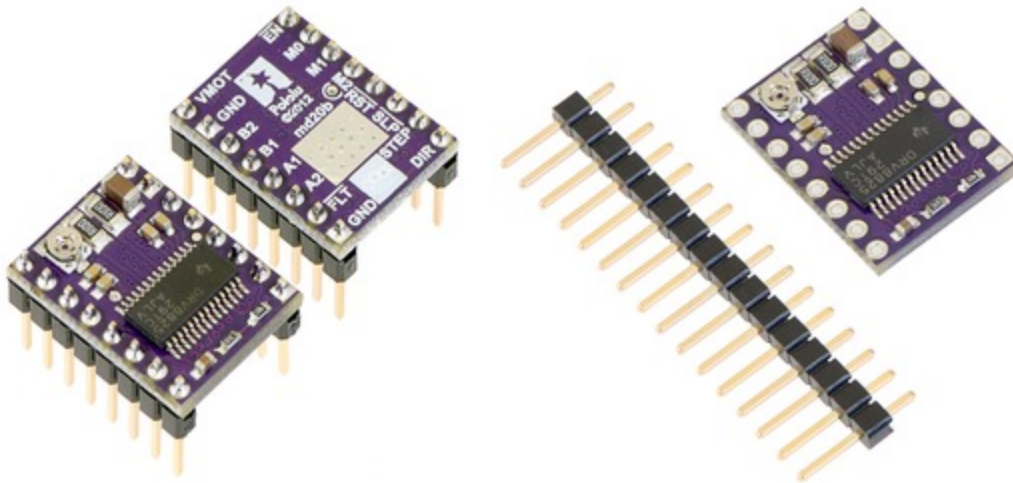


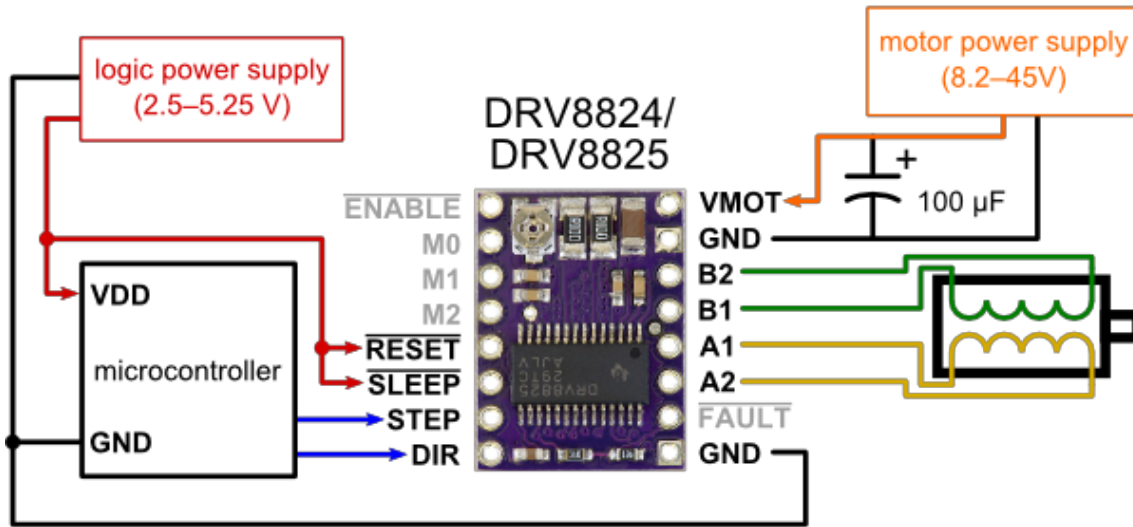
Stepper Driver Carrier Board FAQ Sheet



Stepper Driver Carrier Basics:

- 45V Max Voltage
- Microstepping: Full, Half, 1/4, 1/8, 1/16, 1/32
- Supports Bi-Polar Stepper Motors (4 wire)
- Headers: 0.1"
- Logic Signals: Can use either 3.3v or 5.0v
- Can deliver 1.50A per coil without heatsink
- Can deliver 2.2A per coil with proper cooling
- **Current Limit = VREF × 2**
- The default state of the ENBL pin is to enable the driver, so this pin can be left disconnected.
- Built-in regulator (no external logic voltage supply needed)

Diagram:



Microstepping Table:

MODE0	MODE1	MODE2	Microstep Resolution
Low	Low	Low	Full step
High	Low	Low	Half step
Low	High	Low	1/4 step
High	High	Low	1/8 step
Low	Low	High	1/16 step
High	Low	High	1/32 step
Low	High	High	1/32 step
High	High	High	1/32 step

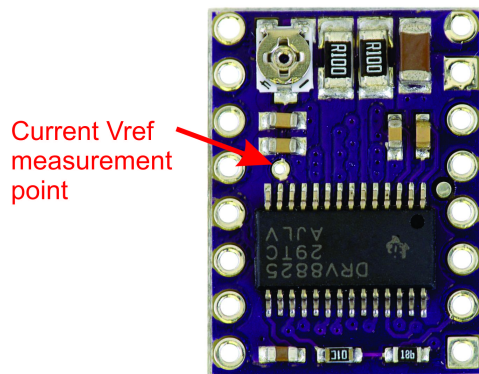
Setting Current

The current is set using the on board potentiometer. Attach one probe of a DC volt meter to a ground point and touch one to the vref measuring point. With the motor voltage powered on set the voltage at the vref point using this formula.

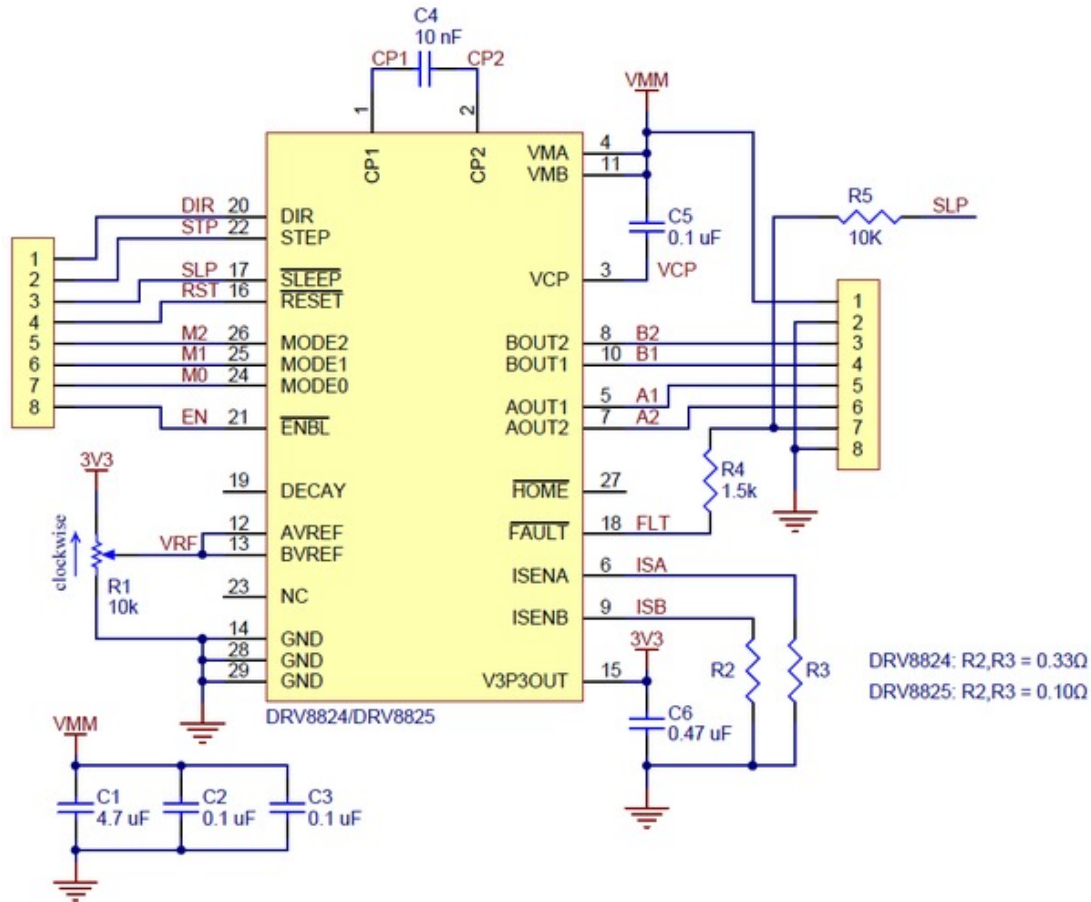
$$\text{Current} = \text{vref} * 2$$

If you want the current to be 1.2 Amps, set the voltage to 0.6V.

Be very careful probing the driver when powered on. Accidentally touching or shorting other pins can permanently destroy the driver.



Schematic



Notes:

1. The pin labels with lines over them is schematic shorthand to for indicating a “NOT” condition with respect to logic signals. Enable with a line over it indicates that a logic high signal would put the driver in a Not Enabled state.
2. This driver does not require a logic supply voltage. It has a fault indicator on the pin that many other drivers use for logic supply input. To keep this backward compatible, it is safe to apply logic voltage to this pin.

Warnings:

1. Connecting or disconnecting a stepper motor while the driver is powered can destroy the driver. (More generally, rewiring anything while it is powered is asking for trouble.)
2. This product can get **hot** enough to burn you long before the chip overheats. Take care when handling this product and other components connected to it.
3. This carrier board uses low-ESR ceramic capacitors, which makes it susceptible

to destructive [LC voltage spikes](#), especially when using power leads longer than a few inches. Under the right conditions, these spikes can exceed the 45 V maximum voltage rating for the DRV8825 and permanently damage the board, even when the motor supply voltage is as low as 12 V. One way to protect the driver from such spikes is to put a large (at least 47 μ F) electrolytic capacitor across motor power (VMOT) and ground somewhere close to the board.

4. Installing the header pins so that the silkscreen side is up and the components are down can limit the range of motion of the trimpot used to set the current limit. If you plan on installing the header pins in this orientation, please set the current limit before soldering in the pins.