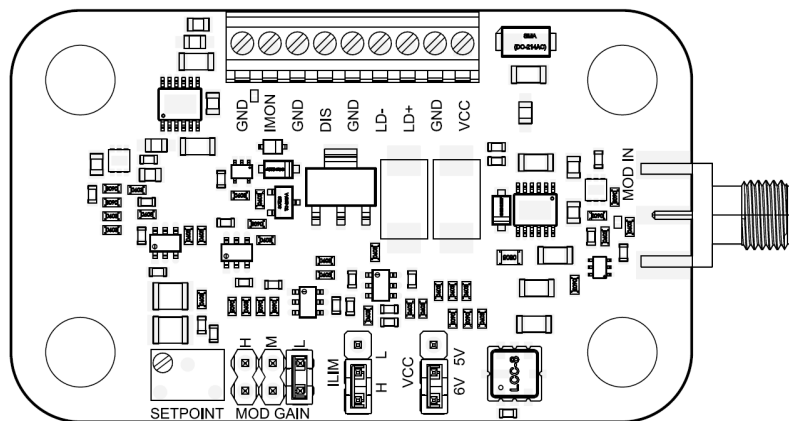


# DRV200 - User Guide



## Quickstart



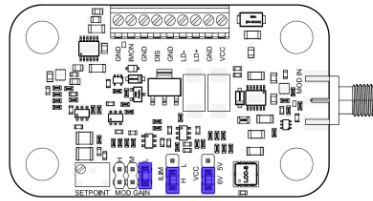
1. Turn the setpoint potentiometer counter-clockwise to set the current to 0 mA.
2. Connect the pins VCC and GND to a 5 V power supply. Thanks to the very high power supply rejection of the DRV200, a switched power supply can be used without degrading the noise performance. However, the current limit functionality of lab power supplies can be useful.
3. (Optional) Connect a 1  $\Omega$  resistor between the LD+ and LD- pins. The current flowing across the resistor can be measured at the IMON pin (2 V = 100 mA for DRV200-A-200, 100 mV = 1 mA for DRV200-A-40). Turn the potentiometer clockwise until you reach the desired current.
4. Turn off the power supply and connect your laser between LD+ and LD- pins.

The DRV200 is designed for operation with floating laser diodes, i.e. that neither the anode nor the cathode is connected to the case. If your laser anode or cathode is internally connected to the case (grounded anode or grounded cathode), make sure that the laser case is isolated from the ground.

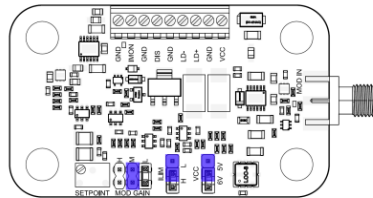
5. Turn on the power supply and adjust the potentiometer

## Jumper configuration

Modulation gain Low, Current limit High, 6 V supply



Modulation gain Medium, Current limit Low, 5 V supply



## Current modulation

The DRV200 can be modulated from DC to 6 MHz using the SMA connector. The MOD GAIN jumper is used to select between 3 modulation gains:

### DRV200-A-40

- Low: 200  $\mu\text{A/V}$
- Medium: 2 mA/V
- High: 20 mA/V

### DRV200-A-200

- Low : 1 mA/V
- Medium: 10 mA/V
- High: 100 mA/V

### DRV200-A-400

- Low : 2 mA/V
- Medium: 20 mA/V
- High: 200 mA/V

Modulation range is  $\pm 1\text{ V}$  and input impedance is  $50\ \Omega$ .

## Supply voltage selection

Set the VCC jumper according to the voltage supply used (5V or 6V). Using a 6V supply provides 1 V of extra compliance voltage.

## Current limit selection

The ILIM jumper can be used to switch between two current limit values:

### DRV200-A-40

- Low: 32 mA
- High: 48 mA

### DRV200-A-200

- Low: 160 mA
- High: 240 mA

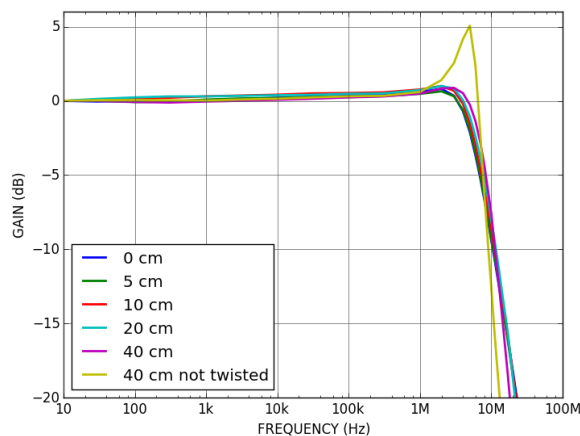
## DRV200-A-400

- Low: 320 mA
- High: 480 mA

## Influence of cable length

The DRV200 offers high modulation bandwidth and some care must be taken when connecting the laser diode to the driver for optimal performance. As a guideline, we measured the modulation response for various length of cable between the driver and a DFB laser in TO can.

The response is measured using a DRV200-A-200 with a modulation gain set to M and a modulation signal of 500 mV<sub>pp</sub>. The cable is a pair of 22 AWG wires (0.644 mm diameter). The cable length is the length of a single wire. The wire is always twisted except for the yellow curve.



We see that for twisted wires the peaking in the response increases slightly with the cable length, but it stays below 1 dB up to a length of 40 cm. However when the cable is not twisted peaking increases to more than 5 dB.

For optimal modulation performance use a twisted pair of wires with length as short as possible. The exact modulation response depends also on the laser diode that is used.