

Hardy

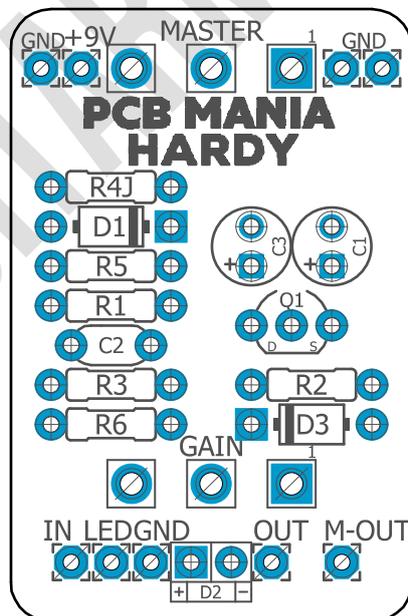
Based on: ZVEX Super Hard On (SHO) & Zvex Super Duper	Number of parts: Low, 16 components	Enclosure type: 125b
Effect type: Tone boost, overdrive/distortion	Technology: MOSFET	Get your board at: Hardy
Build difficult: Easy	Power consumption: 9V	Get your kit at: Das Musikding (Europe)

Project overview:

Hardy allows you to choose between two builds: the **Zvex Super Hard On** or the **Super Duper**.

If you are looking to give your tone a severe boost, look no further than the **Super Hard On** pedal! This ultra-transparent pedal also adds high-end sparkle to your sound, giving you the edge you need to stand out from the crowd.

You can also double the bet by simply stacking two Hardies together; the result is the **Zvex Super Duper**, an explosive overdrive/distortion pedal that features an enormous range of sounds!



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Introduction

Hardy is a small pedal inspired by **ZVEX Super Hard On**, but do not be fooled by its size. This little monster will grant you the power needed to push your sound to the next level, leaving your audience wondering what hit them. It simply makes your guitar sound bigger and pushes your amp harder, causing natural overload, so you will never have to worry about your guitar disappearing again!

Hardy's single Gain knob is a negative-feedback control styled after classic '60s recording console inputs, giving you the pure boost sound that will make your guitar sparkle with life. The best part is that nobody will even know that you are using a pedal; that is the level of clean sounding I am talking about.

You can also stack two Hardys in one small box to build the infamous **Super Duper**, a pedal that comes with a Master volume control and gest you as an overdrive/distortion with any input volume. The two channels can give any amount of gain, from a soft bluesy boost in two stages, to a crunchy rock level, to a wild sustaining beast! When using this pedal, start off slow, and monitor your amp for potential damage. This thing can be so much fun! Just try not to blow up your amp in the process.

Controls

Potentiometers

- Master
- Gain

Bill of materials

Resistors	
Part	Value
R1	5K1
R2	10M
R3	10M
R4J*	100K or unpopulated*
R5	RLED
R6	1m

Diodes	
Part	Value
D1	1N4001
D2	3mm red LED
D3	9.1V-ZENER

Capacitors	
Part	Value
C2	100n

Electrolytic Capacitors	
Part	Value
C1	10u
C3	100u

Potentiometers	
Part	Value
GAIN	C5K
MASTER*	100k A or unpopulated

Transistors	
Part	Value
Q1	BS170

Switches	
Part	Value
-	3PDT Stomp foot

Shopping list

Resistors		
Qty	Value	Parts
1	100K or unpopulated*	R4J*
2	10m	R2, R3
1	1m	R6
1	5K1	R1
1	RLED	R5

Capacitors		
Qty	Value	Parts
1	100n	C2

Electrolytic Capacitors		
Qty	Value	Parts
1	100u	C3
1	10u	C1

Potentiometers		
Qty	Value	Parts
1	100k A or unpopulated	MASTER*

1	5K C	GAIN
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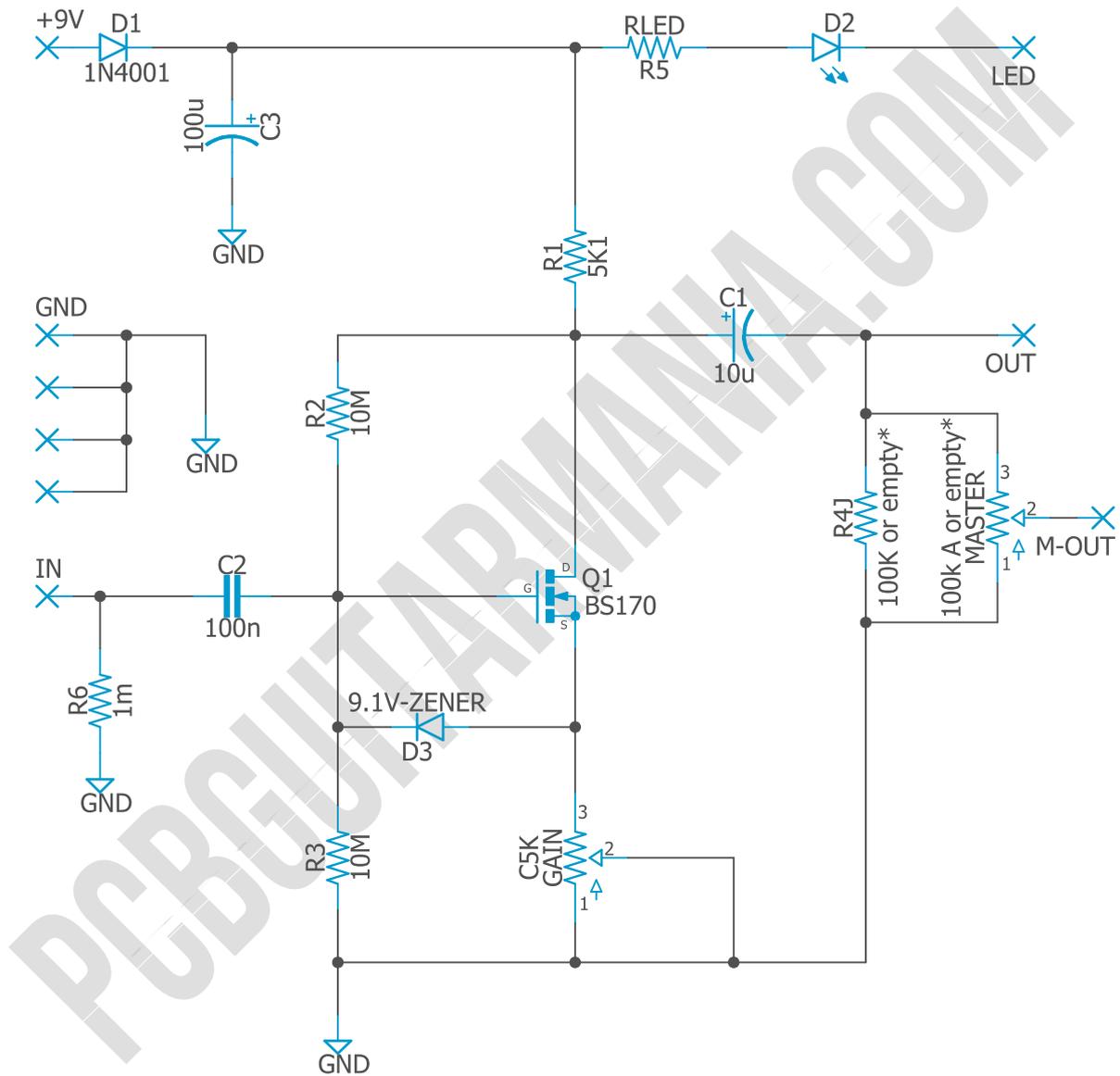
Transistors		
Qty	Value	Parts
1	BS170	Q1

Switches		
Qty	Value	Parts
1 or 2	3PDT Stomp foot	-

Diodes		
Qty	Value	Parts
1	9.1V-ZENER	D3
1	3mm red LED	D2
1	1N4001	D1

Jacks		
Qty	Value	Parts
1	DC JACK	-
2	AUDIO JACK	-

Schematic



Super Hard On / Zvex Super Duper

Hardy allows you to choose between two builds: the **Super Hard On** or the **Zvex Super Duper**.

Super Hard On

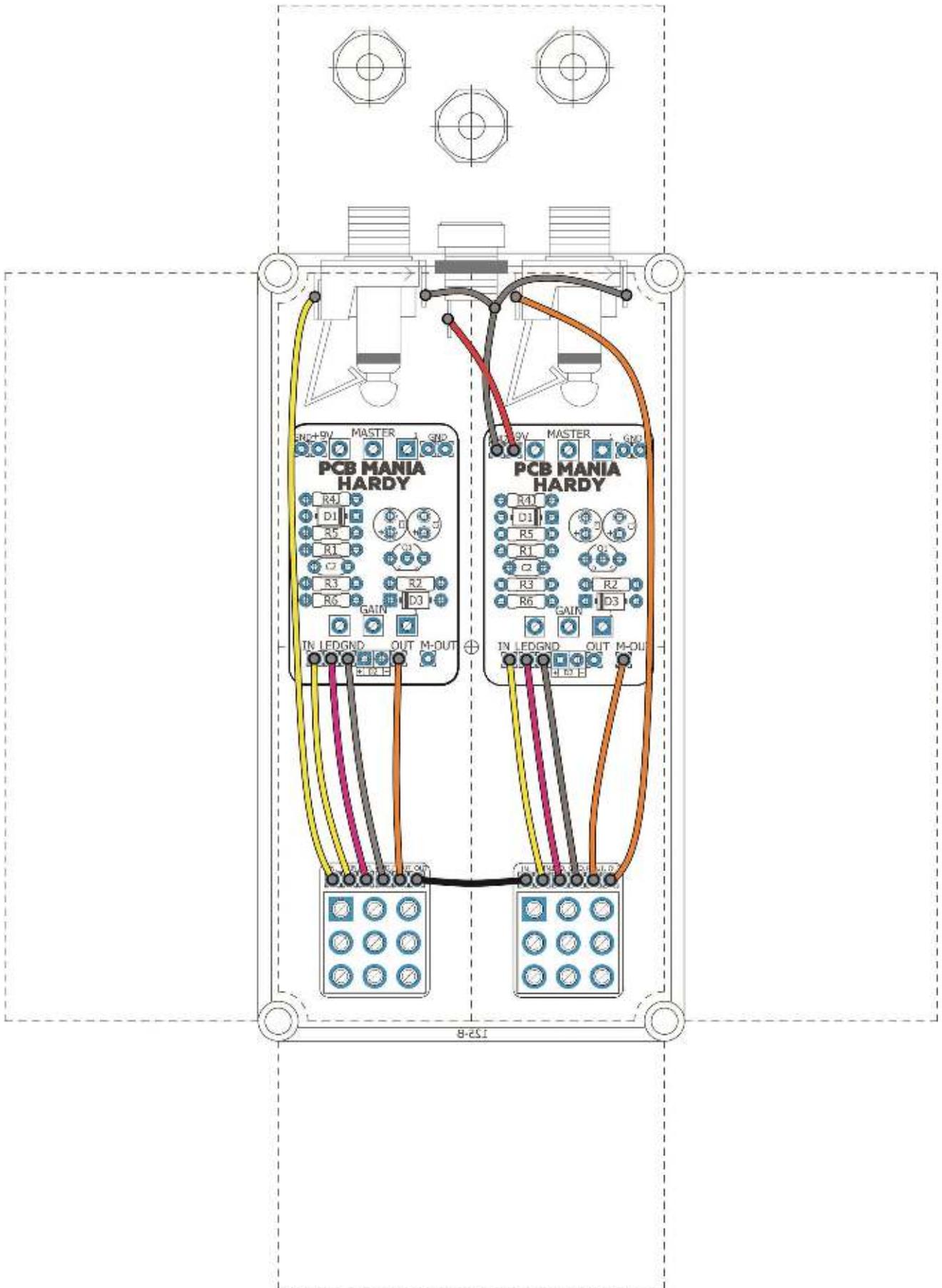
In the first case, build the board as always but ignore the **MASTER** potentiometer and leave it unpopulated.

Zvex Super Duper

To build a Zvex Super Duper, you will need two Hardy boards connected in series, each with its own 3pdt.

The first is a regular **Super Hard On**, with the **MASTER** potentiometer unpopulated.

In the second board, put all the components, including the **MASTER** potentiometer but leave **R4J** unpopulated and use **M-OUT** as the main out instead of regular **OUT**. You can check the wiring in the example below.



Components Recommendations

As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Build Notes

If this is one of your first projects, I recommend you to take a look at our [Pedal Building Guide](#).

For a successful and tidy build, it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

Wiring Diagram

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named "Ctrl" or "LED" is the one that controls the status of the led; wire it to the "LED" pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it [here](#) to access our [Pedal Wiring Guide](#).

Drill Template

This Project has been planned to fit into a 125b enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print on an A4 page.

Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our [PCB Guitar Mania - Builders Group](#) on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!