

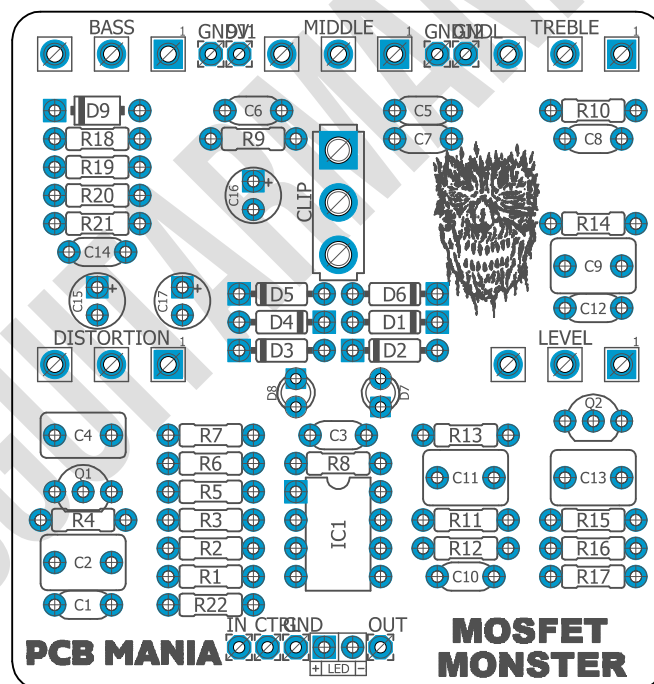
Mosfet Monster

| | | |
|--|---|---|
| Based on: Ibanez® MT-10 Mostortion | Number of parts: Average, 56 components | Enclosure type: 125b |
| Effect type: Classic Overdrive | Technology: Op Amp, silicon NPN transistors | Get your board at: Mosfet Monster |
| Build difficult: Intermediate | Power consumption: 9V | Get your kit at: Das Musikding (Europe) |

Project overview:

Inspired by the Ibanez® MT-10 Mostortion, the classic vintage guitar Stompbox from the '80s.

Our Mosfet Monster is a noble recreation of the hard-to-find (and buy) classic that comes in the form of a characterful overdrive with great touch sensitivity, excellent clarity, and versatile EQ.



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Introduction

There is no doubt that Ibanez MT10 is a tremendous classic pedal for Rock and Metal. It produces a unique amp-like OD/distortion sound with a touch of Marshall-character that behaves very 'civilized' in all settings. It suits classic Rock-styles, Blues, and Fusion and does a great job 'pushing' another OD-pedal.

The tone-knobs cover with precision the frequencies you would wish to alter. Just be cautious with the mighty Bass- (muddy) and High- (shrill) knobs because they are very effective. Clean boost is also no problem with the Level control.

As all knobs cover broad ranges of tone variation, it is always easy to adjust your tone to the amp, guitar, and personal preference.

Enjoy our Mosfet Monster; this board is one of those DIY builds that will accompany you for a long time.

Controls

Potentiometers

- DISTORTION, controls the amount of gain.
- LEVEL, controls the amount of output level.
- MIDDLE, controls the volume of the mid frequencies.
- TREBLE, controls the volume of the high frequencies.
- BASS, controls the volume of the low frequencies.

Bill of materials

| Resistors | |
|-----------|-------|
| Part | Value |
| R1 | 2M2 |
| R2 | 1k |
| R3 | 510k |
| R4 | 10k |
| R5 | 220R |
| R6 | 1M |
| R7 | 2k7 |
| R8 | 47k |
| R9 | 10k |
| R10 | 1M |
| R11 | 10k |
| R12 | 47k |
| R13 | 1k |
| R14 | 510k |
| R15 | 10k |
| R16 | 470R |
| R17 | 100k |
| R18 | 10k |
| R19 | 10k |
| R20 | 9k1 |
| R21 | 22k |
| R22 | 6k8 |

| Capacitors | |
|------------|-------|
| Part | Value |
| C1 | 22n |
| C2 | 1u |
| C3 | 47p |
| C4 | 220n |
| C5 | 68n |
| C6 | 15n |
| C7 | 33n |
| C8 | 330p |
| C9 | 1u |
| C10 | 1n |
| C11 | 1u |
| C12 | 100n |
| C13 | 1u |
| C14 | 100n |

| Electrolytic Capacitors | |
|-------------------------|-------|
| Part | Value |
| C15 | 100u |
| C16 | 47u |
| C17 | 10u |

| Potentiometers | |
|----------------|-------|
| Part | Value |
| BASS | A250k |
| DISTORTION | A500k |

| | |
|--------|-------|
| LEVEL | B100k |
| MIDDLE | A50k |
| TREBLE | A250k |

| IC | |
|------|----------|
| Part | Value |
| IC1 | CA3260EZ |

| Transistors | |
|-------------|--------|
| Part | Value |
| Q1 | 2N5088 |
| Q2 | 2N5088 |

| Diodes | |
|--------|-------------|
| Part | Value |
| D1 | 1N914 |
| D2 | 1N914 |
| D3 | 1N914 |
| D4 | 1N914 |
| D5 | 1N914 |
| D6 | 1N914 |
| D7* | 3mm red LED |
| D8* | 3mm red LED |
| D9 | 1N5817 |

Shopping list

| Resistors | | |
|-----------|-------|----------------------------|
| Qty | Value | Parts |
| 1 | 100k | R17 |
| 6 | 10k | R4, R9, R11, R15, R18, R19 |
| 2 | 1M | R6, R10 |
| 2 | 1k | R2, R13 |
| 1 | 220R | R5 |
| 1 | 22k | R21 |
| 1 | 2M2 | R1 |
| 1 | 2k7 | R7 |
| 1 | 470R | R16 |
| 2 | 47k | R8, R12 |
| 2 | 510k | R3, R14 |
| 1 | 6k8 | R22 |
| 1 | 9k1 | R20 |

| Capacitors | | |
|------------|-------|------------------|
| Qty | Value | Parts |
| 2 | 100n | C12, C14 |
| 1 | 15n | C6 |
| 1 | 1n | C10 |
| 4 | 1u | C2, C9, C11, C13 |
| 1 | 220n | C4 |
| 1 | 22n | C1 |
| 1 | 330p | C8 |
| 1 | 33n | C7 |
| 1 | 47p | C3 |
| 1 | 68n | C5 |

| Electrolytic Capacitors | | |
|-------------------------|-------|-------|
| Qty | Value | Parts |
| 1 | 100u | C15 |
| 1 | 10u | C17 |
| 1 | 47u | C16 |

| Potentiometers | | |
|----------------|-------|--------------|
| Qty | Value | Parts |
| 2 | A250k | BASS, TREBLE |
| 1 | A500k | DISTORTION |
| 1 | A50k | MIDDLE |
| 1 | B100k | LEVEL |

| IC | | |
|-----|----------|-------|
| Qty | Value | Parts |
| 1 | CA3260EZ | IC1 |

| Transistors | | |
|-------------|--------|--------|
| Qty | Value | Parts |
| 2 | 2N5088 | Q1, Q2 |

| Switches | | |
|----------|-----------------|-------|
| Qty | Value | Parts |
| 1 | 3PDT Stomp foot | - |

| Diodes | | |
|--------|-------------|------------------------|
| Qty | Value | Parts |
| 1 | 1N5817 | D9 |
| 6 | 1N914 | D1, D2, D3, D4, D5, D6 |
| 2 | 3mm red LED | D7, D8* |

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

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

D7, D8*

These diodes shine when clipping the signal. You can drill the enclosure and make them shine externally - like two creepy monster eyes.

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!