Misfit

FX Type: **OVERDRIVE**
Build Level: Beginner
Based On: Ibanez® MT-10™

Last Updated: February 14, 2025 5:57 PM
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The 2025 version of the **Misfit** has no circuit changes. The PCB layout has been converted to the Standard Series 1590B design template.

Overview

The Ibanez® Mostortion™ (MT-10) is one of the late comers in the gear-rage brigade. It's been discontinued for years but has gained some notoriety through various aficionado opines. And, with that comes a massive increase in price on the used market. Current listings on Reverb show the Mostortion to be in the $600 to $800 range.

So, what gives? As always, it comes down to another "mythical chip". The MT-10 utilized the CA3260 as it's gain engine. It's a dual op-amp but with a twist: instead of internal FET or BJT transistors, the CA3260 uses mosfets. Specifically, PMOS input and CMOS output. According to its datasheet, the CA3260 is ideal for single rail applications and is capable of outputting a voltage swing near the supply rail. Does this mean it's better than a typical YATS with your favorite flavor of dual op-amp? No. But, it is different. It has excellent note clarity and string separation even with a modest amount of gain. This is likely due to the subtle amount of clean signal blended with the overdrive/distortion. It's a very pleasant tone!

The **Misfit** is the MT-10 without any mods other than true-bypass operation and the use of large film caps in place of some electrolytics.

Special note: the CA3260E has a supply limit of 16v. So, don't run it at 18v or you may damage your expensive chip!

Controls

- **LVL -** Output level.
- **DIST -** Distortion amount.
- **BASS, MID, TREB:** A three band passive EQ.

Kevin over at AIONFX has a really good writeup on the Mostortion MT-10 for his "Quantum" project: https://aionfx.com/project/quantum-mosfet-distortion/

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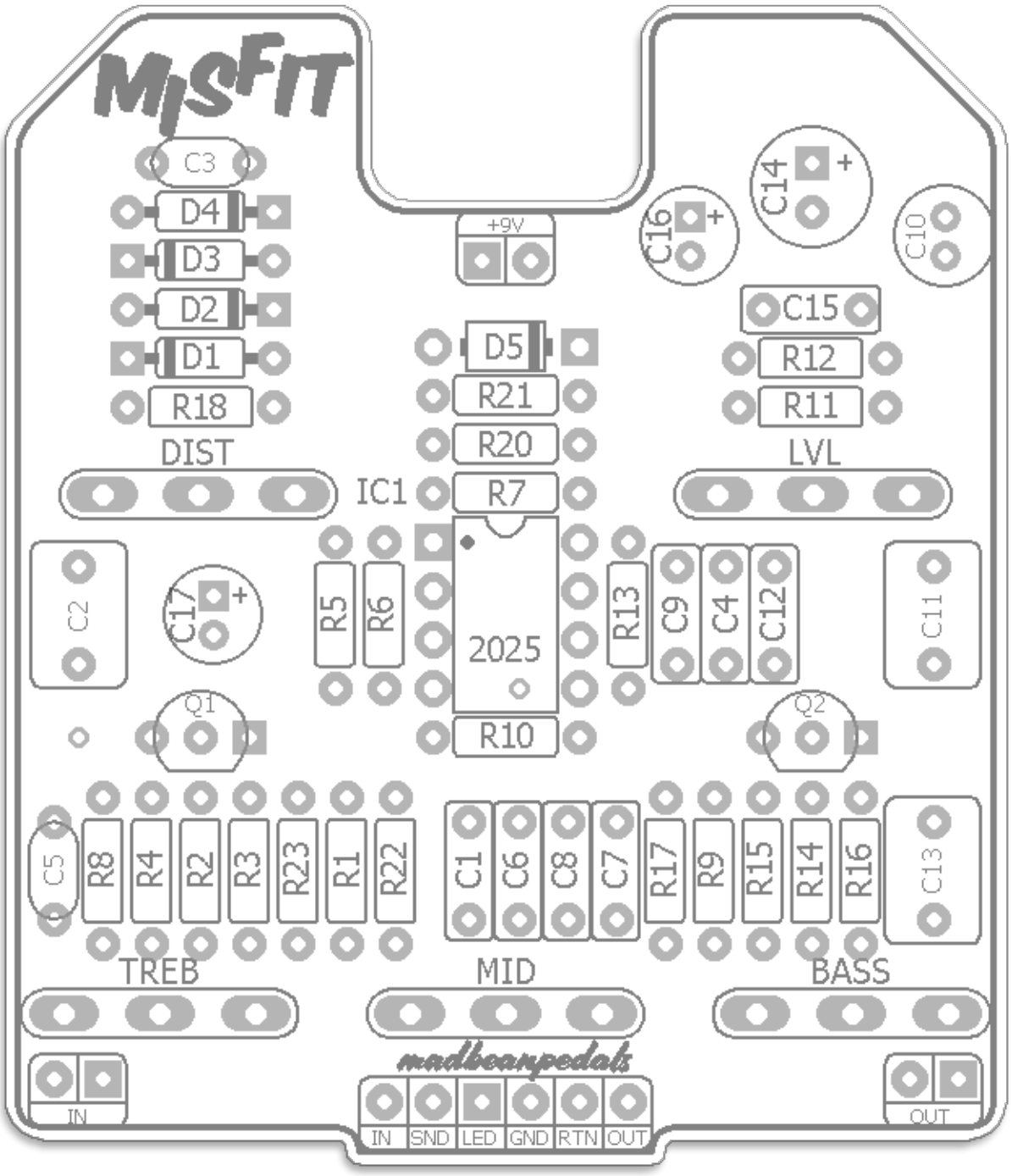
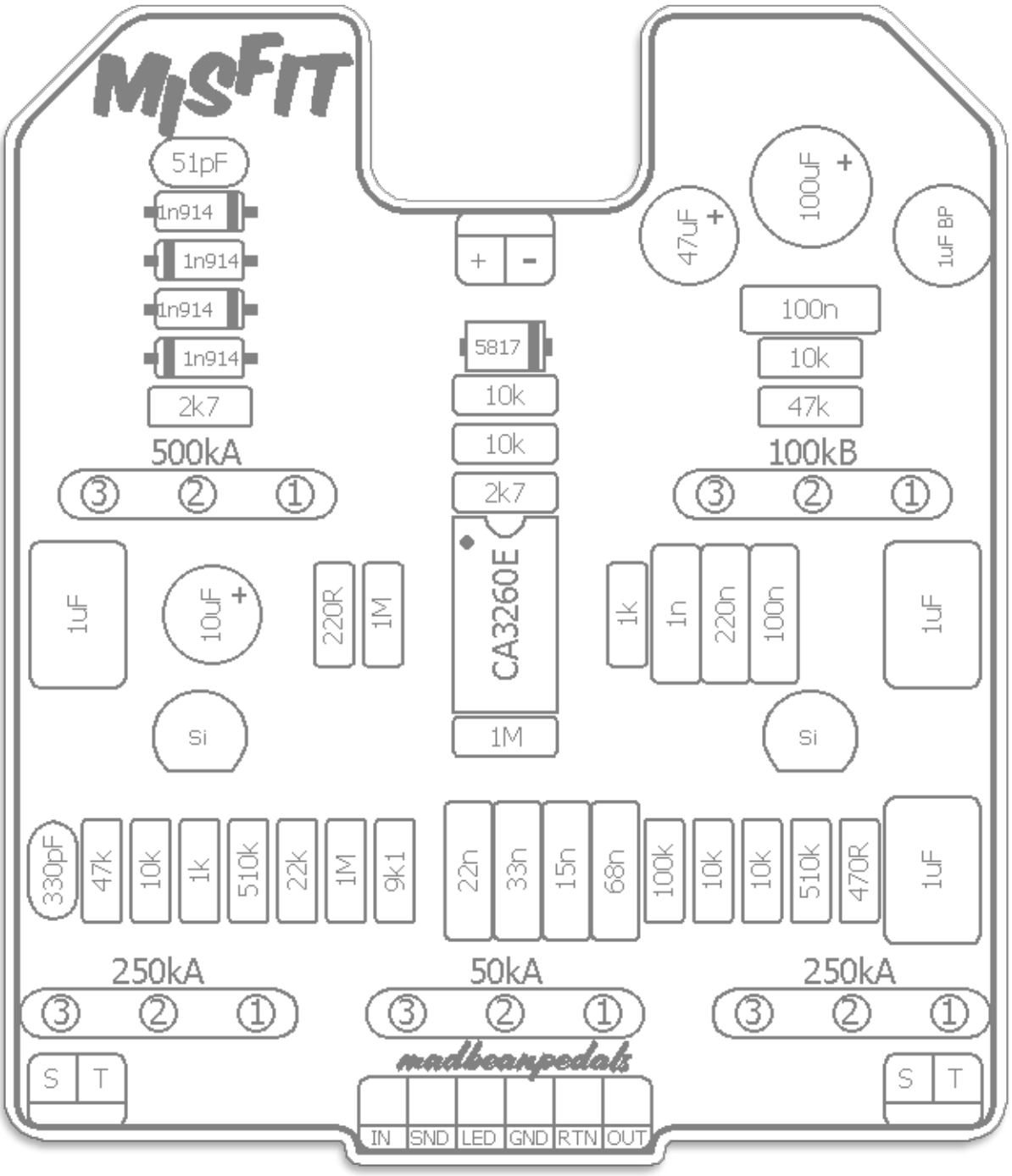
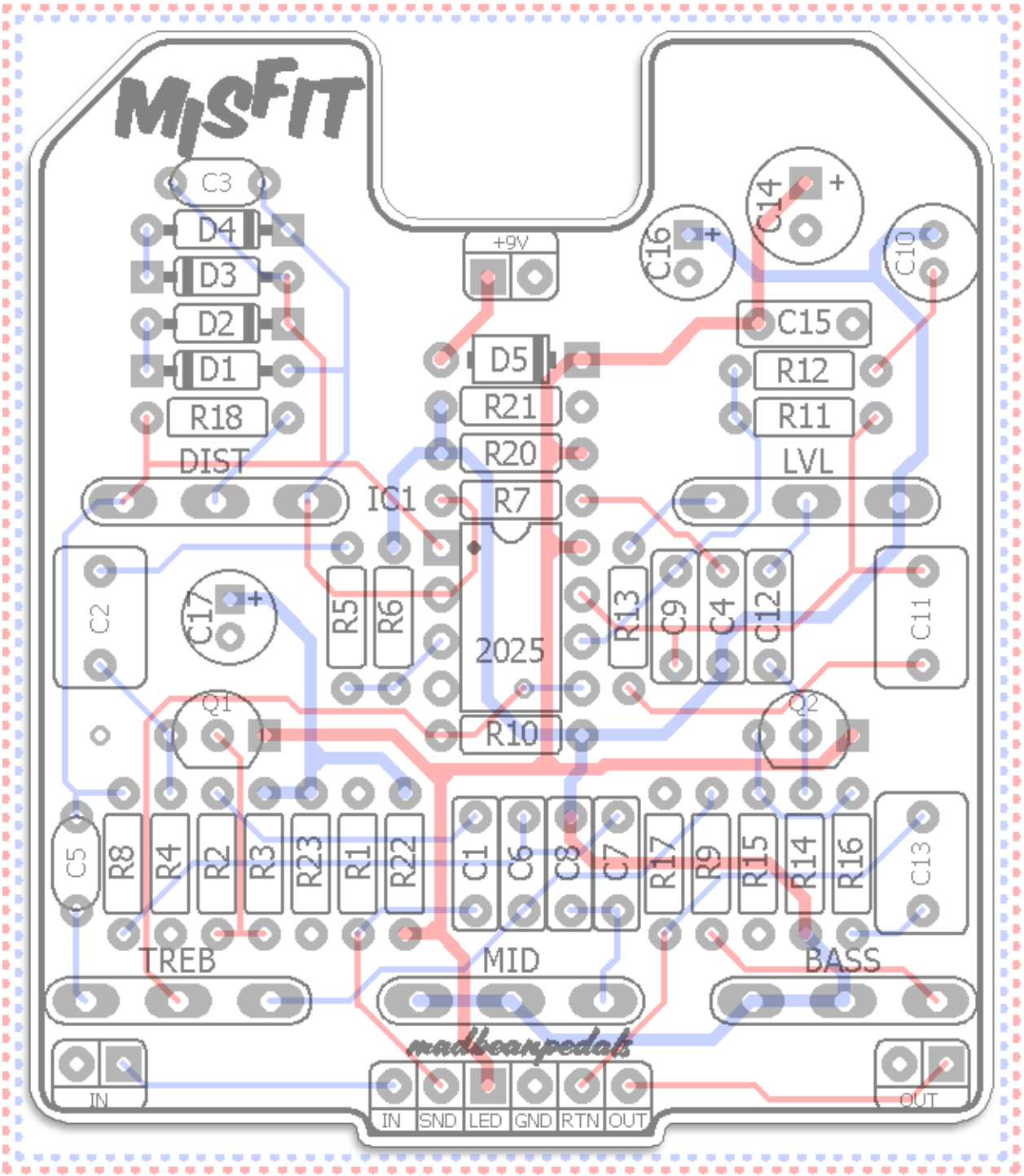
Parts Layout



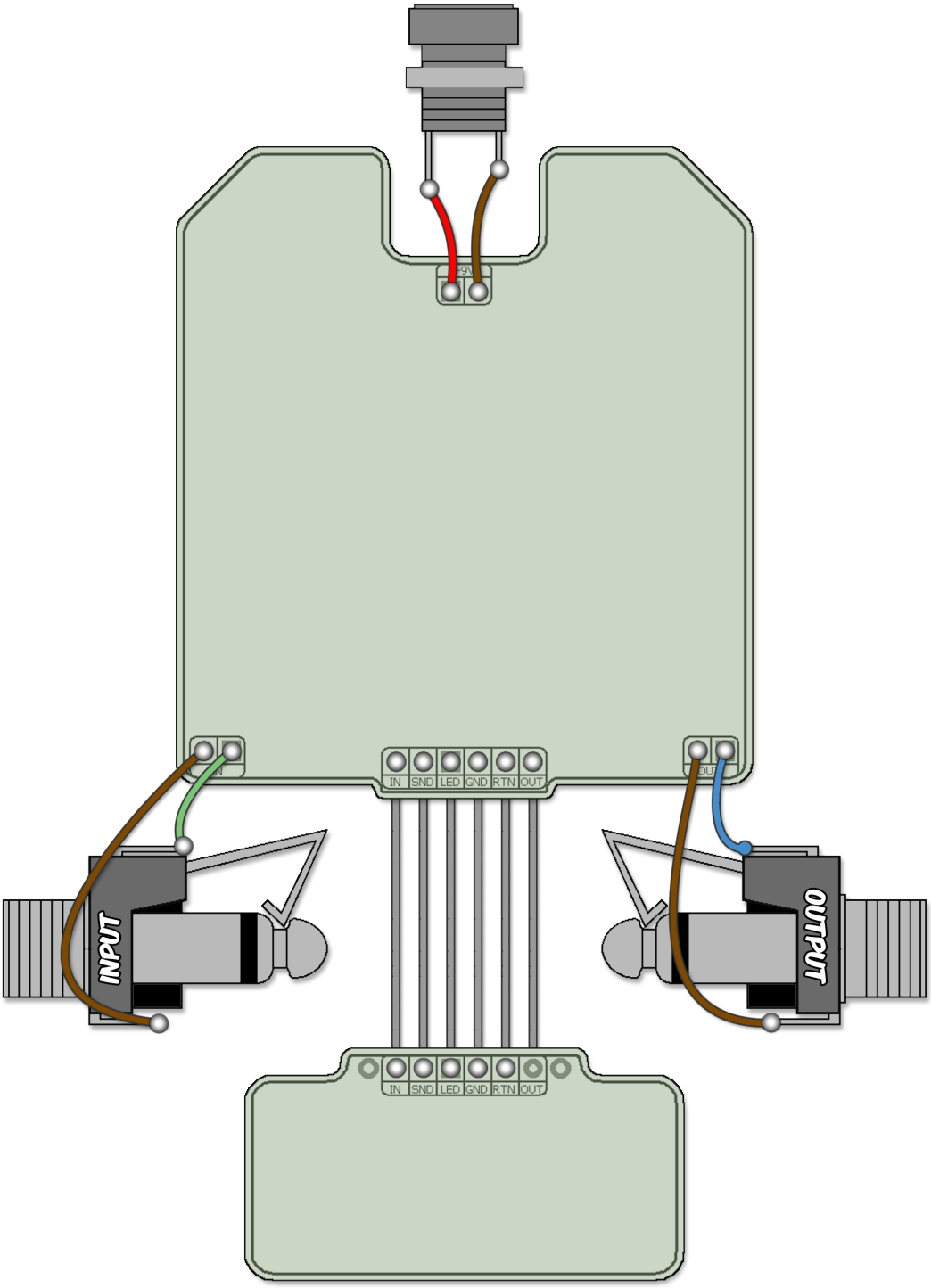
Component Values



Trace Layout



Wiring



Unless otherwise noted, all Standard Series projects have the same wiring regardless of which 3PDT bypass board is used. A 6-pin, 2” ribbon cable is recommended for soldering the connections between the two PCBs.

B.O.M.

Resistors		Caps		Diodes	
R1	1M	C1	22n	D1	1n914
R2	1k	C2	1uF	D2	1n914
R3	510k	C3	51pF	D3	1n914
R4	10k	C4	220n	D4	1n914
R5	220R	C5	330pF	D5	1n5817
R6	1M	C6	33n	Transistors	
R7	2k7	C7	68n	Q1	Si
R8	47k	C8	15n	Q2	Si
R9	10k	C9	1n	IC	
R10	1M	C10	1uF BP	IC1	CA3260E
R11	47k	C11	1uF	Pots	
R12	10k	C12	100n	MID	50kA
R13	1k	C13	1uF	LVL	100kB
R14	510k	C14	100uF	BASS	250kA
R15	10k	C15	100n	TREB	250kA
R16	470R	C16	47uF	DIST	500kA
R17	100k	C17	10uF		
R18	2k7				
R20	10k				
R21	10k				
R22	9k1				
R23	22k				

Shopping List

Values	QTY	Type	Rating
220R	1	Metal / Carbon Film	1/4W
470R	1	Metal / Carbon Film	1/4W
1k	2	Metal / Carbon Film	1/4W
2k7	2	Metal / Carbon Film	1/4W
9k1	2	Metal / Carbon Film	1/4W
10k	6	Metal / Carbon Film	1/4W
22k	1	Metal / Carbon Film	1/4W
47k	2	Metal / Carbon Film	1/4W
100k	1	Metal / Carbon Film	1/4W
510k	2	Metal / Carbon Film	1/4W
1M	3	Metal / Carbon Film	1/4W
51pF	1	Ceramic / MLCC	16v min.
330pF	1	Ceramic / MLCC	16v min.
1n	1	Film	16v min.
15n	1	Film	16v min.
22n	1	Film	16v min.
33n	1	Film	16v min.
68n	1	Film	16v min.
100n	2	Film	16v min.
220n	1	Film	16v min.
1uF	3	Film	16v min.
1uF BP	1	Bi-Polar / Non-Polar	16v min.
10uF	1	Electrolytic	16v min.
47uF	1	Electrolytic	16v min.
100uF	1	Electrolytic	16v min.
1n914	4		
1n5817	1		
Si	2	2n3904, 2n5088, etc.	
CA3260E	1		
50kA	1	PCB Right Angle	16mm
100kB	1	PCB Right Angle	16mm
250kA	2	PCB Right Angle	16mm
500kA	1	PCB Right Angle	16mm

Additional Hardware

(1) 1590B enclosure
(2) Lumberg 1/4” Compact mono jacks
(1) Slim 2.1mm DC jack
(1) Standard 3PDT footswitch
(1) 5mm LED

Build Notes

- Since the CA3260E has been obsoleted it is not readily available, even at the typical DIY supply sites. However, I have secured a small batch of them and pre-tested those against a known good one (each chip was plugged in and compared). I will offer these for sale along with the Misfit PCB while I have them available. If you want to looking on your own, I had good luck with UTSource. Not perfect luck, but good.

- If you don't have the CA3260 you can just sub in another dual op-amp. True, it may not sound exactly the same but it will still sound *good*. If you socket it you always have the option to swap it out later.

- Q1 and Q2 can be any typical BJT type since they are just emitter-followers. I used 2n5088 for my build. 2n3904 is another good choice. Whatever you choose, the PCB pinout for Q1 and Q2 is the same as the 2n3904 C-B-E.

- If you don't have a 9k1 resistor for R22 use two resistors in series to approximate that value. I used 8k2 and 910R.

Circuit Voltages

IC1	CA3260E
1	4.58
2	4.61
3	4.24
4	0
5	4.56
6	4.56
7	4.61
8	9.25

Q1	Si
C	9.25
B	5.01
E	4.55

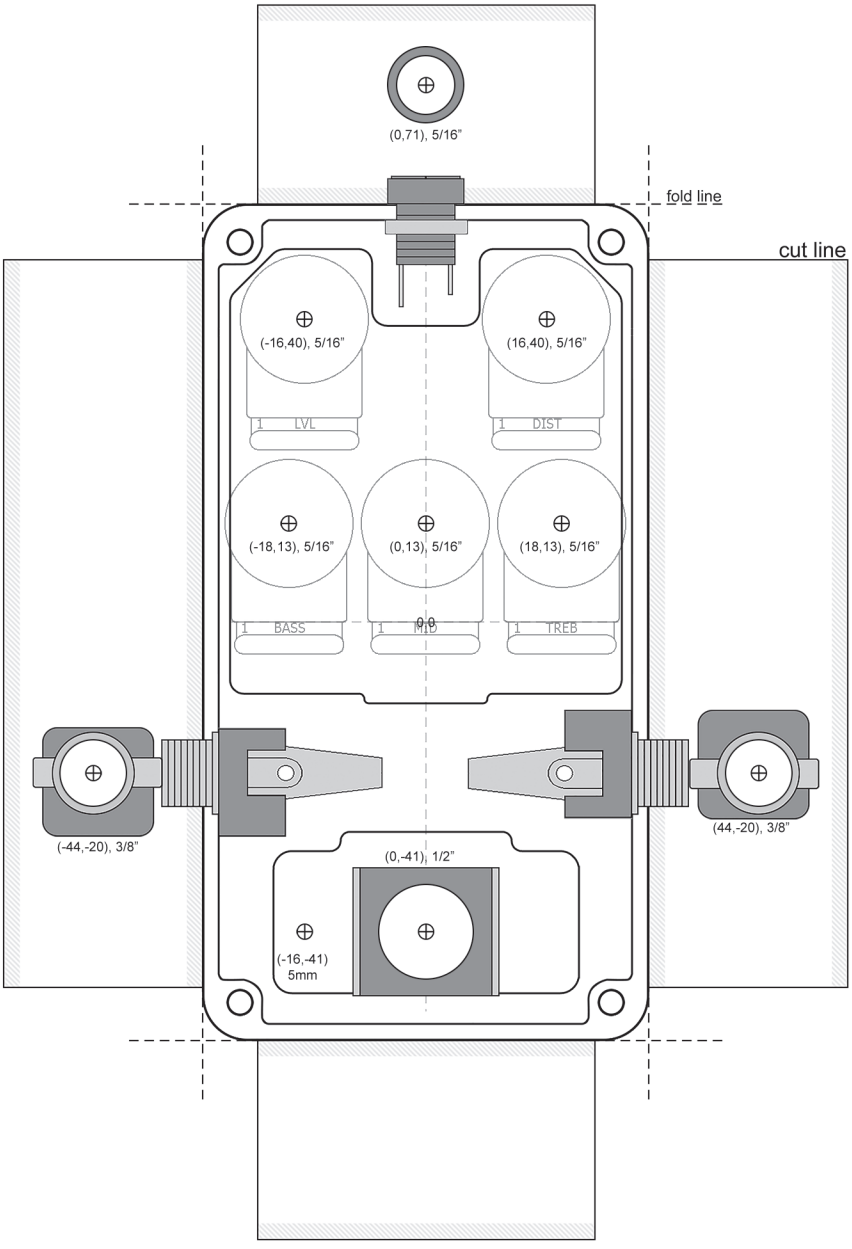
Q2	Si
C	9.25
B	3.59
E	3.09

9.52vDC One Spot supply
Current Draw: ~6mA

1590B Drill Template

Coordinates are denoted in (X,Y), drill size format starting from the center (0,0) location of the enclosure.

Tayda drill template for the Misfit

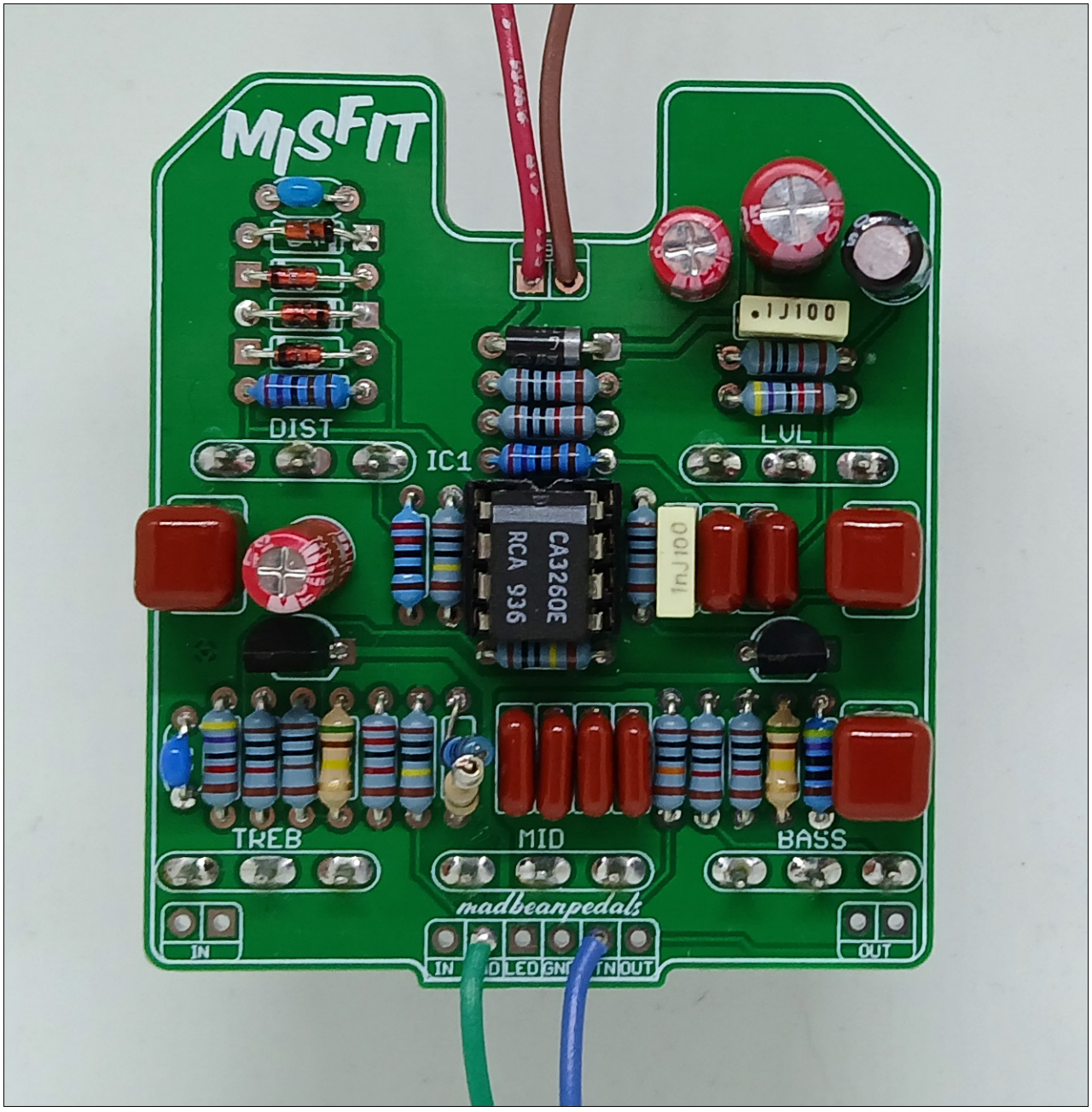


Hardware

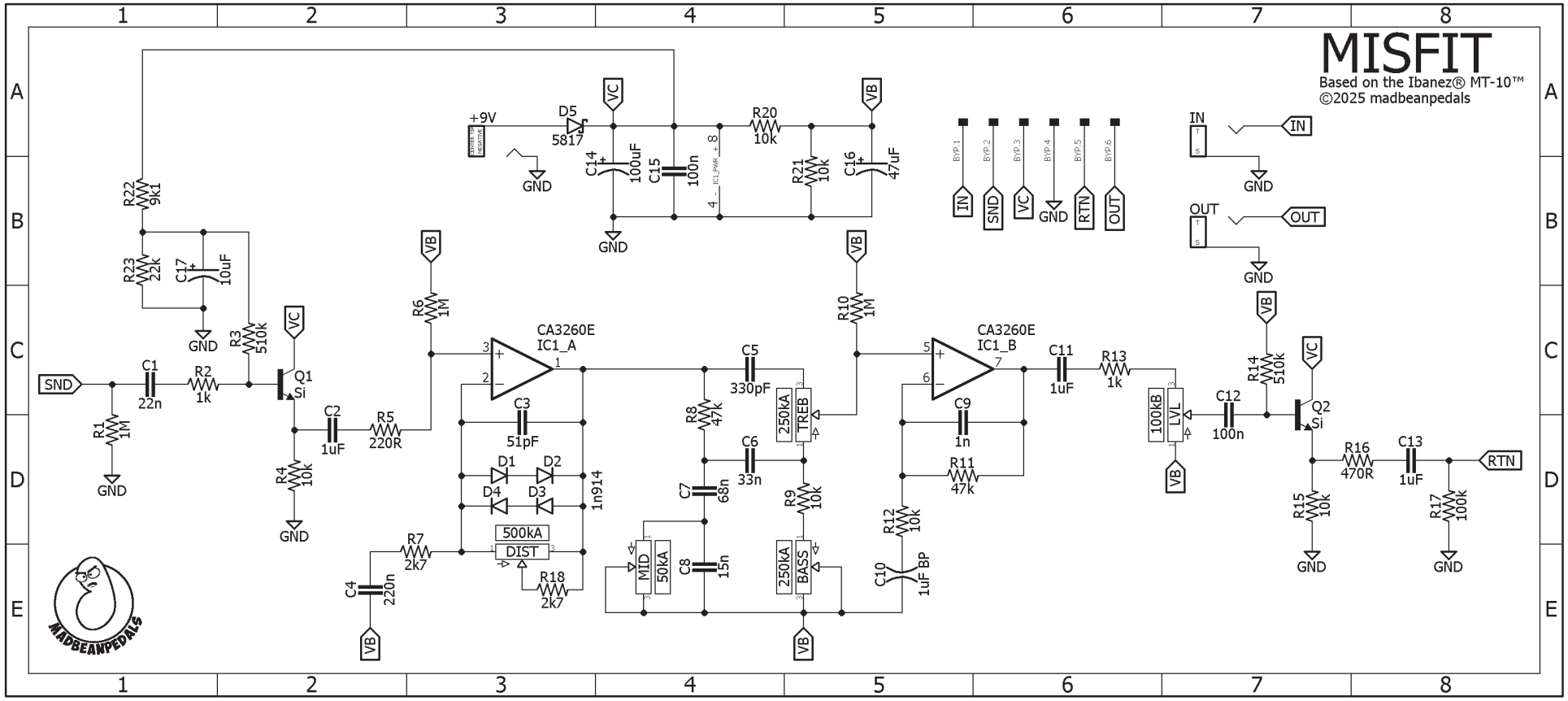
1590B enclosure
Lumberg 1/4” Compact mono jacks
Slim 2.1mm DC jack
Standard 3PDT footswitch
5mm LED

NOTE: Different 1/4” and DC jack styles may require different sized drill holes.

Build Pic


MISFIT
DIST
IC1
LVL
.1J100
CA3260E
RCA 936
1nJ100
TREB
MID
BASS
madbeanpedals
IN
OUT

Schematic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CA3260E
IC1_A
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IC1_B
+9V
5817
SND
IN
OUT
RTN
VC
VB
GND
500kA
DIST
250kA
TREB
250kA
BASS
50kA
MID
100kB
LVL
1n914
1uF BP
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