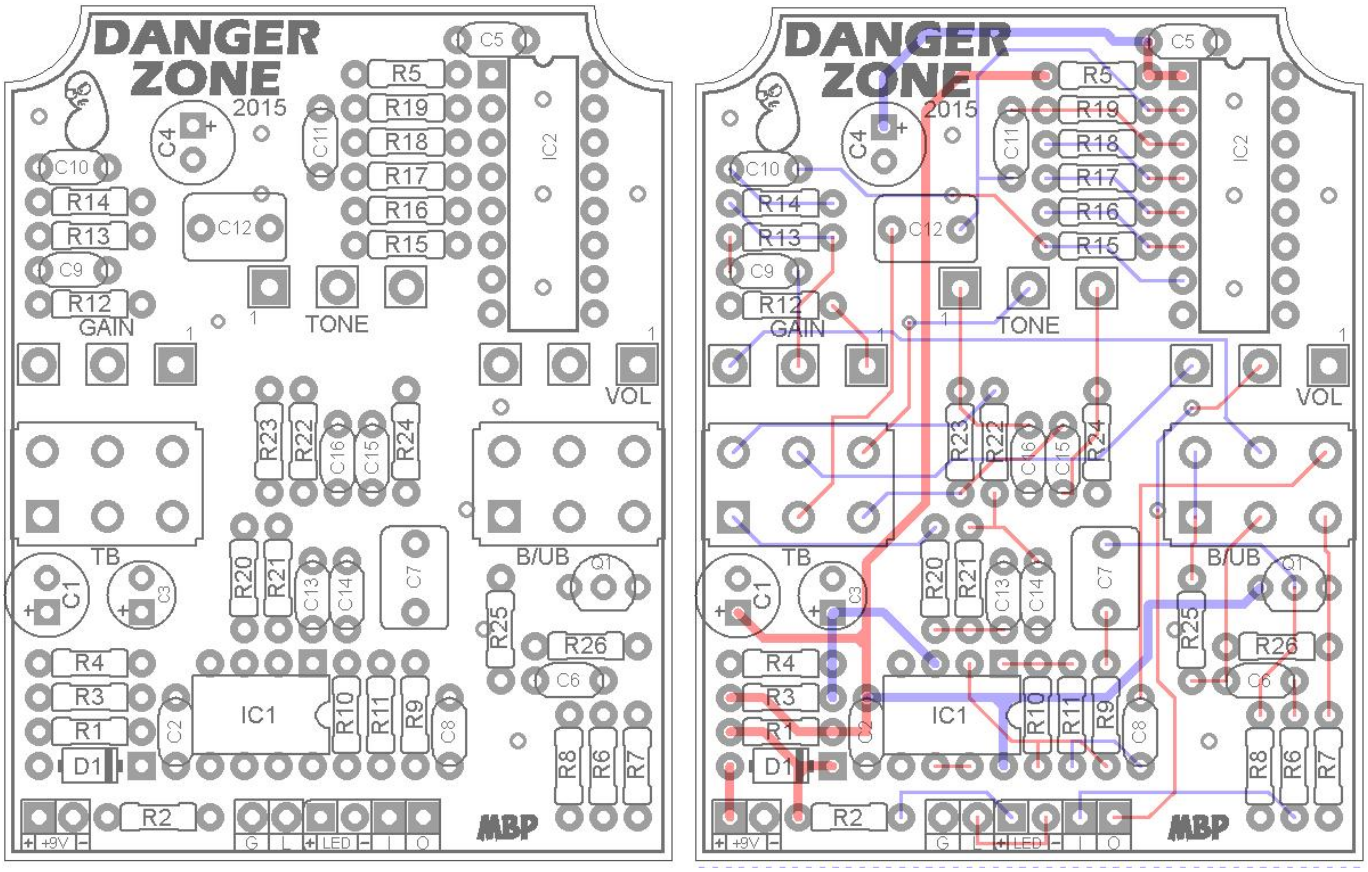
DANGER ZONE

FX TYPE: OVERDRIVE

1.95”W x 2.5”H



Terms of Use: *You are free to use purchased* ***Danger Zone*** *circuit boards for both DIY and small commercial operations. You may not offer* ***Danger Zone*** *PCBs for resale or as part of a “kit” in a commercial fashion. Peer to peer re-sale is, of course, okay.*

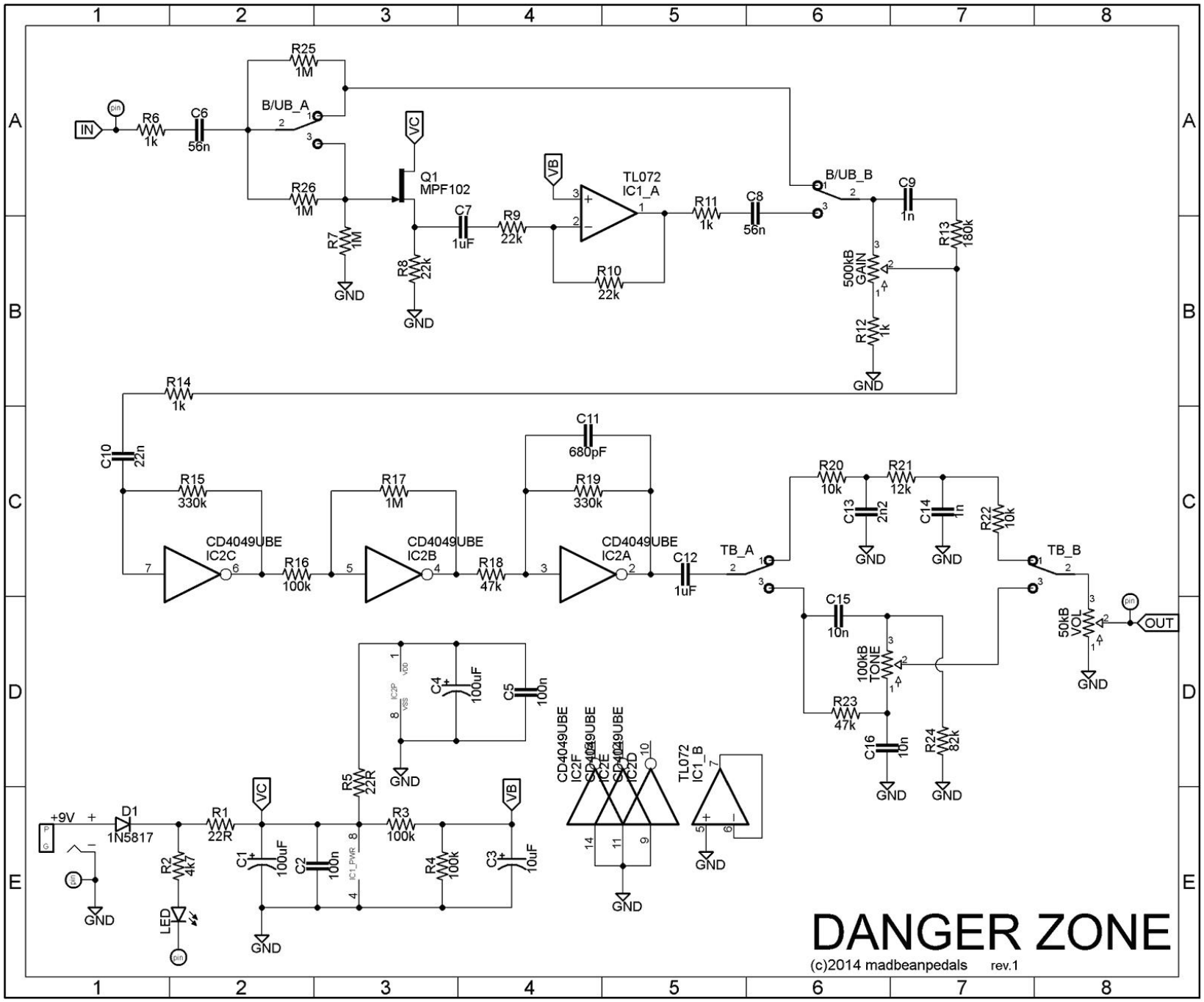
B.O.M.

Resistors		Caps		Diodes	
R1	22R	C1	100uF	D1	1N5817
R2	4k7	C2	100n	**Transistors**	
R3	100k	C3	10uF	Q1	MPF102
R4	100k	C4	100uF	**I.C.**	
R5	22R	C5	100n	IC1	TL072
R6	1k	C6	56n	IC2	CD4049UBE
R7	1M	C7	1uF	**Switches**	
R8	22k	C8	56n	TB	On/On
R9	22k	C9	1n	B/UB	On/On
R10	22k	C10	22n	**Pots**	
R11	1k	C11	680pF	GAIN	500kB
R12	1k	C12	1uF	TONE	100kB
R13	180k	C13	2n2	VOL	50kB
R14	1k	C14	1n		
R15	330k	C15	10n		
R16	100k	C16	10n		
R17	1M				
R18	47k				
R19	330k				
R20	10k				
R21	12k				
R22	10k				
R23	47k				
R24	82k				
R25	1M				
R26	1M				

Shopping List			
Value	QTY	Type	Rating
22R	2	Metal / Carbon Film	1/4W
1k	4	Metal / Carbon Film	1/4W
4k7	1	Metal / Carbon Film	1/4W
10k	2	Metal / Carbon Film	1/4W
12k	1	Metal / Carbon Film	1/4W
22k	3	Metal / Carbon Film	1/4W
47k	2	Metal / Carbon Film	1/4W
82k	1	Metal / Carbon Film	1/4W
100k	3	Metal / Carbon Film	1/4W
180k	1	Metal / Carbon Film	1/4W
330k	2	Metal / Carbon Film	1/4W
1M	4	Metal / Carbon Film	1/4W
680pF	1	Ceramic	16v Min
1n	2	Film	16v Min
2n2	1	Film	16v Min
10n	2	Film	16v Min
22n	1	Film	16v Min
56n	2	Film	16v Min
100n	2	Film	16v Min
1uF	2	Film	16v Min
10uF	1	Electrolytic	16v Min
100uF	2	Electrolytic	16v Min
1N5817	1		
MPF102	1		
TL072	1		
CD4049UBE	1		
DPDT	2	On/On PCB Mount	
500kB	1	Short Pin PCB Mount	16mm
100kB	1	Short Pin PCB Mount	16mm
50kB	1	Short Pin PCB Mount	16mm

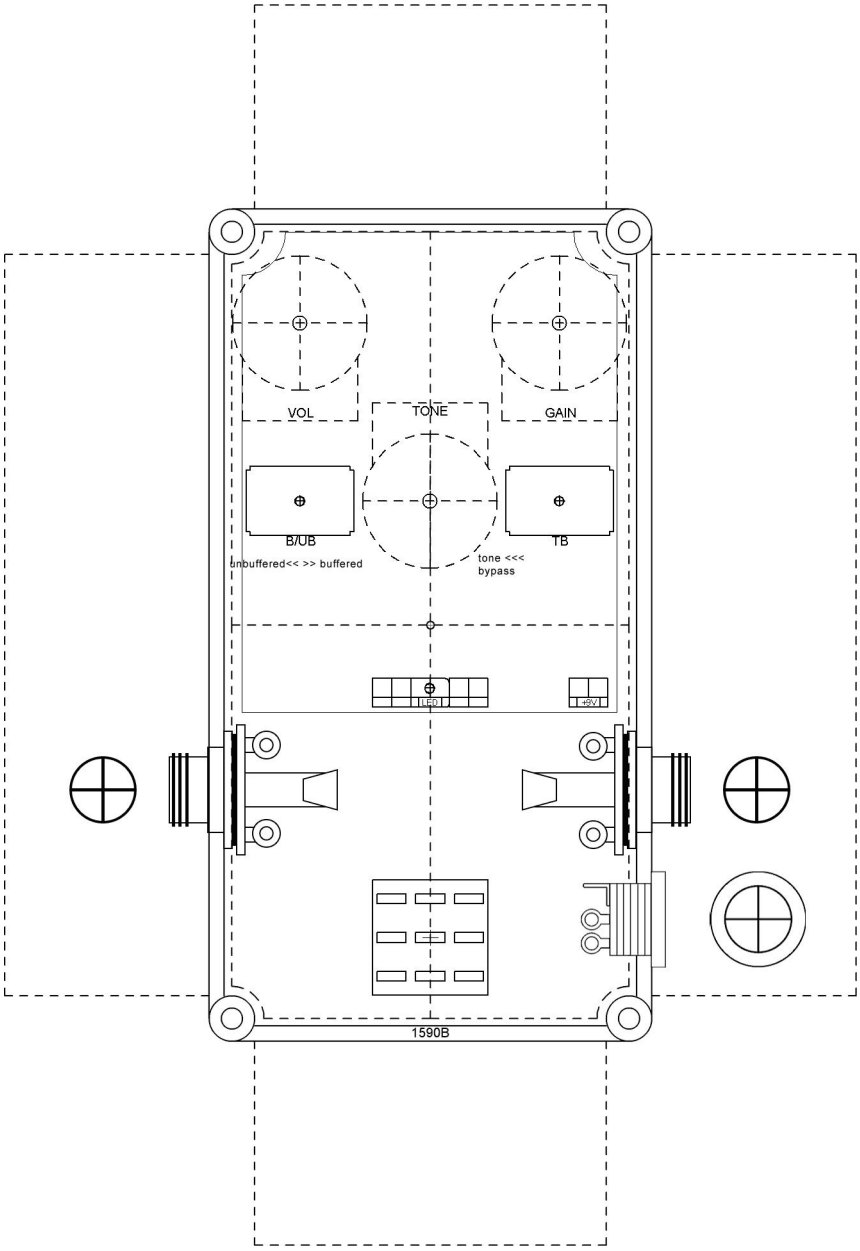
- You can sub a 2n5457 for the MPF102, if needed.
- You should use a C4049UBE for IC2 (un-buffered version)

DPDT switches: **http://smallbear-electronics.mybigcommerce.com/dpdt-on-on-pc-mount/**


DANGER ZONE
(c)2014 madbeanpedals rev.1
IN
OUT
+9V
D1
1N5817
R1 22R
R2 4k7
LED
R3 100k
R4 100k
R5 22R
R6 1k
R7 1M
R8 22k
R9 22k
R10 22k
R11 1k
R12 1k
R13 180k
R14 1k
R15 330k
R16 100k
R17 1M
R18 47k
R19 330k
R20 10k
R21 12k
R22 10k
R23 47k
R24 82k
R25 1M
R26 1M
C1 100uF
C2 100n
C3 10uF
C4 100uF
C5 100n
C6 56n
C7 1uF
C8 56n
C9 1n
C10 22n
C11 680pF
C12 1uF
C13 2n2
C14 1n
C15 10n
C16 10n
Q1 MPF102
TL072 IC1_A
TL072 IC1_B
CD4049UBE IC2A
CD4049UBE IC2B
CD4049UBE IC2C
CD4049UBE IC2D
CD4049UBE IC2E
CD4049UBE IC2F
B/UB_A
B/UB_B
TB_A
TB_B
500kB GAIN
100kB TONE
50kB VOL
VC
VB
GND

1590B Drill Guide

4.44”W x 6.47”H

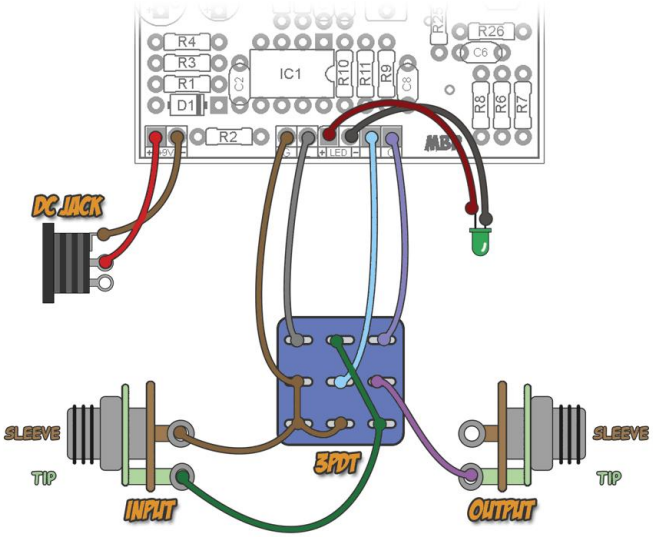


The indicator LED can be soldered directly to the PCB, if you like.

Download the Photoshop file used to make this template here:
www.madbeanpedals.com/projects/DangerZone/DangerZone_DRILL.zip

B/UB: Left side is un-buffered; right side is buffered.
TB: Left side is tone bypass; right side is tone control active.

Wiring Guide



2015 Change Log

- Increased R22 to 10k. Added R25, R26 as anti-pop resistors on switch.

Overview

A few years ago there were a couple of madbeanpedals projects based on the Blackstone Appliances® Mosfet Overdrive™. These were pretty popular for a while but were discontinued along with most of the boutique type clones in 2011. With the discontinuation of the Snarkdoodle in 2013 (Red Llama), MBP has been lacking on a good 4049-based project. So, the **Danger Zone** was brought to life to fill the gap.

The **Danger Zone** is very much in the mold of the Mosfet Overdrive™ but stripped down and re-configured in a few key ways. The input section has been modified to behave differently by moving the input buffer in front of the first gain stage while giving the option of bypassing both of those for a true “reactive” type gain control using the B/UB switch (buffered/un-buffered). This “reactive” mode shifts the Gain control to behave more like the volume knob on your guitar. To offset any treble bleed introduced by that change, a modified version of the “Kinman Treble Bleed” mod was used on the Gain pot (the 1n/180k resistor combo). The buffered mode will add a bit more volume to the circuit and offers a second “voicing” to the overdrive.

After the Gain control we have three gain stages followed by a Big Muff™ style tone control. The tone control also has a bypass switch for increased output and gain (TB switch). When the tone section is bypassed the Tone knob becomes inactive. Two low pass filters in series round off the top end when the tone control is off.

Like most 4049-based overdrives, the **Danger Zone** offers a nice alternative to the standard TS/BB/JFET style OD’s that are so popular. This type of overdrive is characterized more by density than smoothness; less mid-range and slightly “colder” (although those descriptions are my own subjectivity). At high gain levels it can take on a more fuzzy type quality rather than over-the-top distortion.

Voltages

9.3v Supply MP102	
D	8.51
G	0
S	2.884
TL072	
1	4.28
2	4.28
3	4.26
4	0
5	0
6	8.3
7	8.3
8	8.53

9.3v Supply CD4049UBE	
1	8.01
2	3.43
3	3.66
4	3.7
5	3.64
6	3.66
7	3.68
8	0
9	0
10	8
11	0
12	8
13	few mV
14	0
15	8
16	few mV