

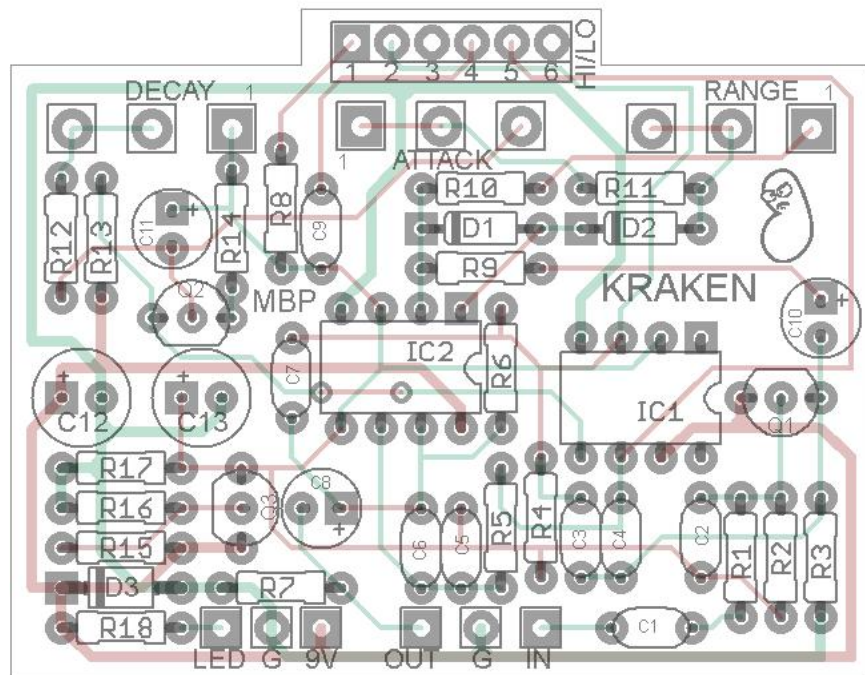
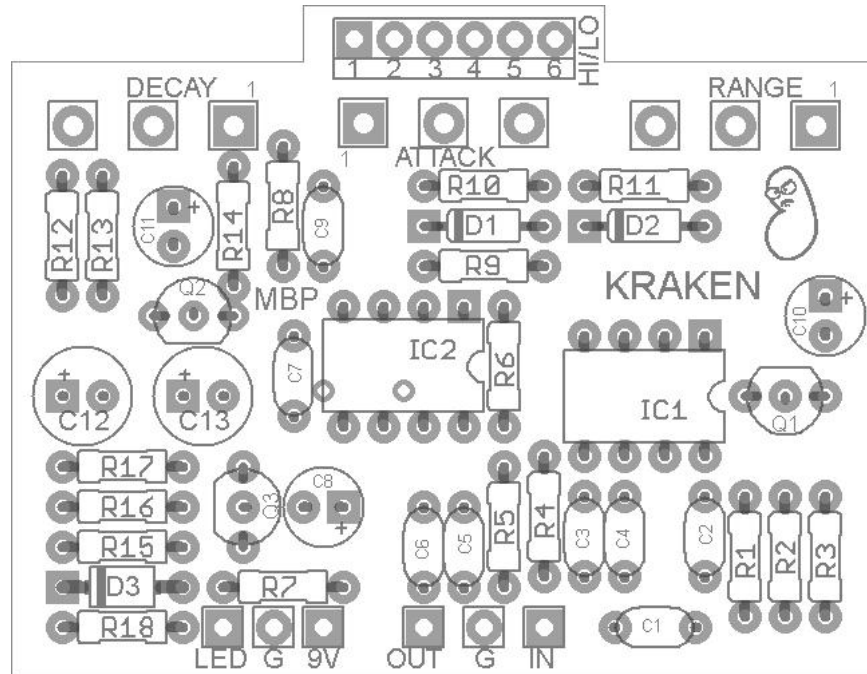
KRAKEN

FX Type: Envelope Filter

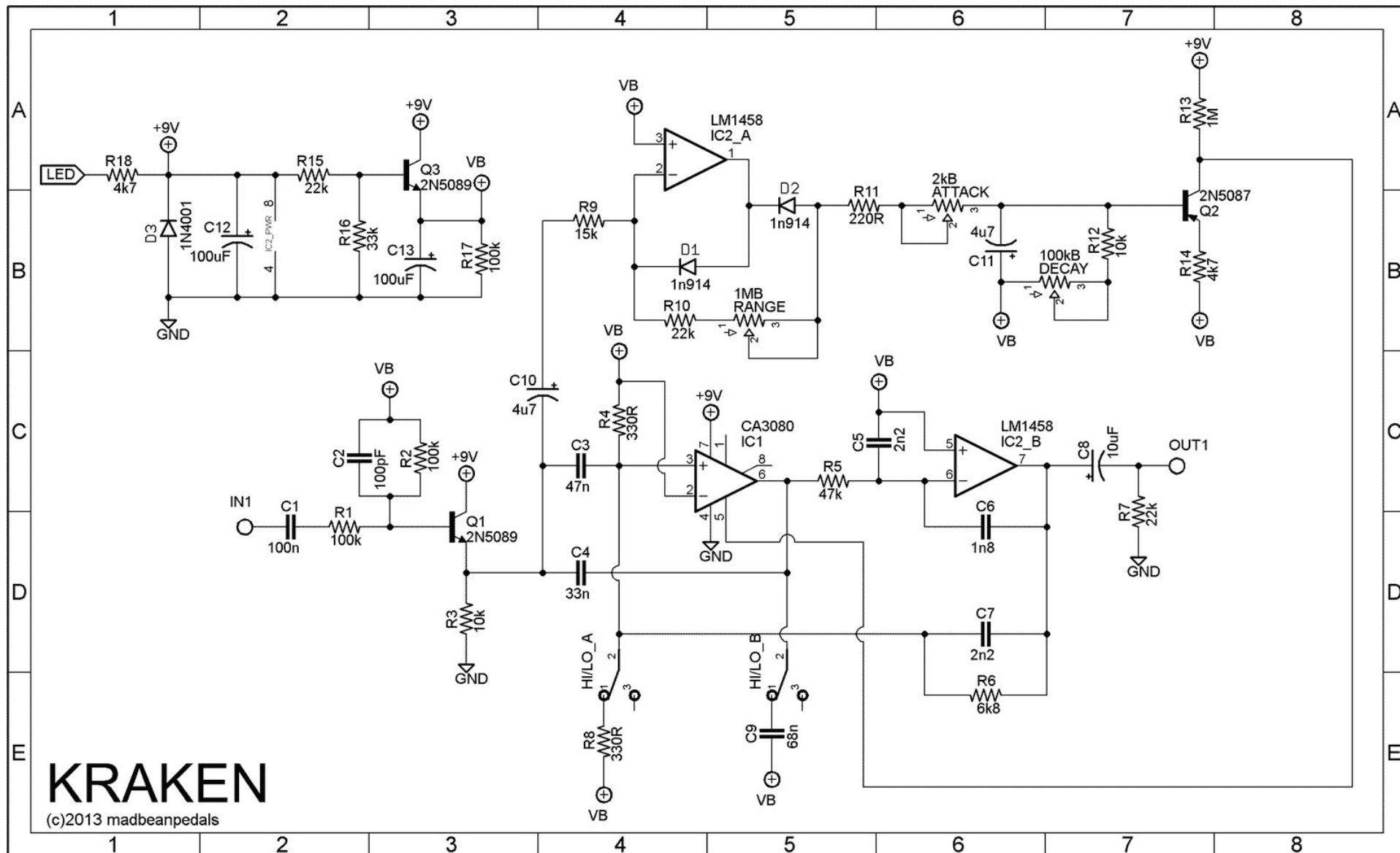
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06.13 – see pg.4 for a correction

2.15" W x 1.66" H



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B.O.M.					
Resistors		Caps		Diodes	
R1	100k	C1	100n	D1, D2	1n914
R2	100k	C2	100pF	D3	1N4001
R3	10k	C3	47n	Transistors	
R4	330R	C4	33n	Q1	2N5089
R5	47k	C5	2n2	Q2	2N5087
R6	6k8	C6	1n8	Q3	2N5089
R7	22k	C7	2n2	IC	
R8	330R	C8	10uF	IC1	CA3080
R9	15k	C9	68n	IC2	LM1458
R10	22k	C10	4u7	Switch	
R11	220R	C11	4u7	HI/LO	DPDT (On/On)
R12	10k	C12	100uF	Pots	
R13	1M	C13	100uF	ATTACK	2kB
R14	4k7			DECAY	100kB
R15	22k			RANGE	1MB
R16	33k				
R17	100k				
R18	4k7				

Shopping List				
Value	Qty	Type	Spacing	
100k	3	Metal/Carbon	7.5mm	
10k	2	Metal/Carbon	7.5mm	
15k	1	Metal/Carbon	7.5mm	
1M	1	Metal/Carbon	7.5mm	
220R	1	Metal/Carbon	7.5mm	
22k	3	Metal/Carbon	7.5mm	
330R	2	Metal/Carbon	7.5mm	
33k	1	Metal/Carbon	7.5mm	
47k	1	Metal/Carbon	7.5mm	
4k7	2	Metal/Carbon	7.5mm	
6k8	1	Metal/Carbon	7.5mm	
100pF	1	Ceramic / Film	5mm	
100n	1	Film	5mm	
1n8	1	Film	5mm	
2n2	2	Film	5mm	
33n	1	Film	5mm	
47n	1	Film	5mm	
68n	1	Film	5mm	
100uF	2	Electrolytic	2.5mm	
10uF	1	Electrolytic	2.5mm	
4u7	2	Electrolytic	2.5mm	
1n914	2		7.5mm	
1N4001	1		7.5mm	
2N5089	2			
2N5087	1			
CA3080	1			
LM1458	1			
DPDT (On/On)	1			
2kB	1	PCB Mount	16mm	
100kB	1	PCB Mount	16mm	
1MB	1	PCB Mount	16mm	

Overview

The **Kraken** is a modified Mutron Micro V™ envelope filter. The Mutron Micro V™ is the “little brother” of the more fully featured Mutron III™ having only a Range pot and a Hi/Low switch for the filtering. The Kraken expands the controls to include Attack and Decay for the envelope response. This is the only alteration to this classic and great sounding envelope!

Controls

Range: This controls the intensity of the envelope dynamics generated by your pick attack. Higher settings yield greater sensitivity, which in turn drives the intensity of the swept filter.

Attack: This control lets you dial in finer adjustments to the attack of the envelope. It is interactive with the Range pot.

Decay: This control determines how long it takes for the envelope to sweep the filter. Higher settings yield longer decay times.

Hi/Lo: This switch controls the range of the filter that is swept. Hi is thin and resonant. Lo is full and dark.

Mods

Try a pair of diodes with lower forward voltage for D1 and D2. This may improve sensitivity to picking dynamics. You can use 1n34a, BAT41 or BAT46.

Try a higher value pot for the Decay control for even longer decay times. Suggestions are 250kB or 500kB.

Notes

You can use 16mm short pin PCB mounted pots for the Attack, Range and Decay controls.

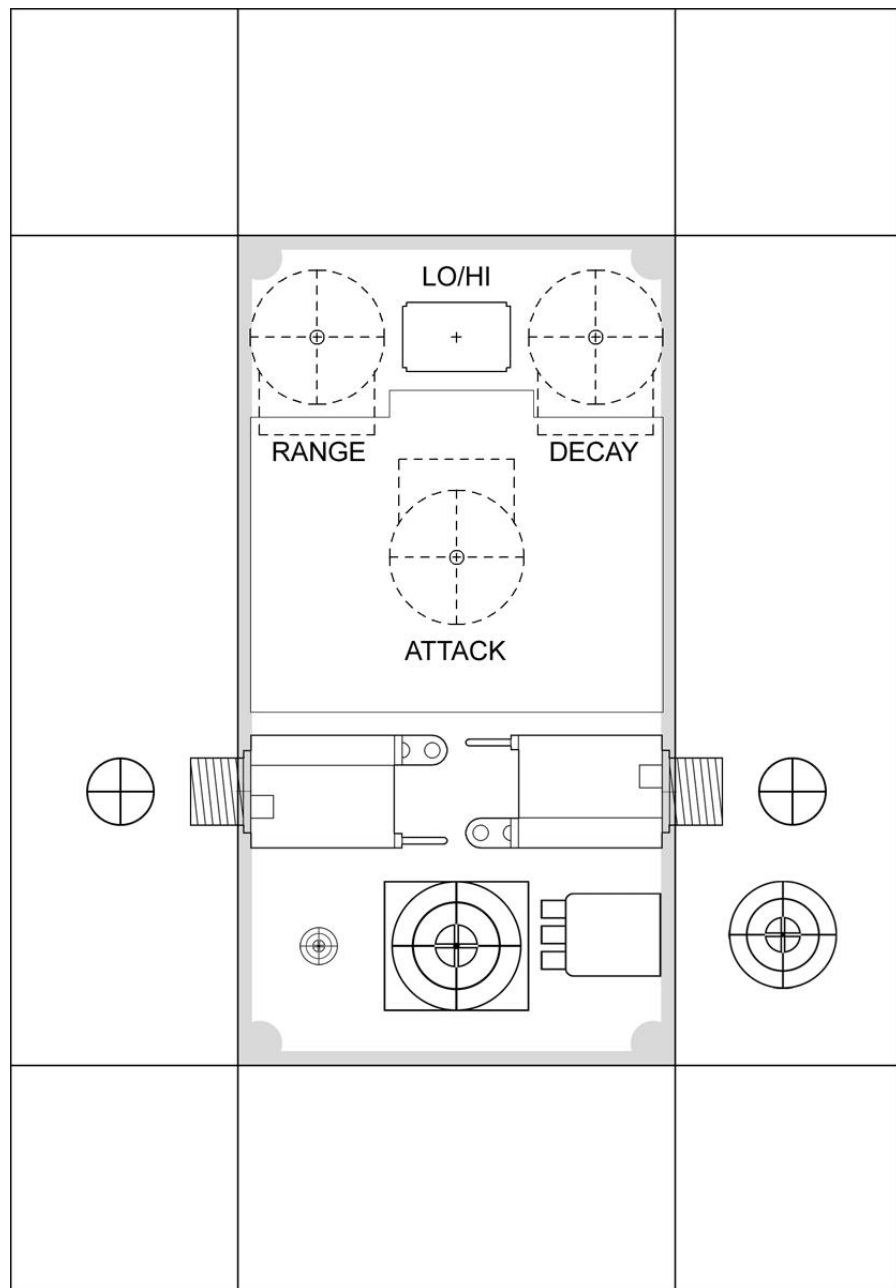
<http://www.smallbearelec.com/servlet/Detail?no=692>

While other ICs may work for IC2, I strongly suggest sticking with the LM1458. It seems to handle envelope controls pretty well. You can probably use a 4558 in a pinch. I would avoid the TL072 and similar JFET based op-amps.

06.13.13 – Q2 was drawn incorrectly on the schematic (collector and emitter were swapped). The schematic on pg.2 has been corrected to show the correct orientation. You should flip Q2 180° on the PCB (on both the fabbed and single sided versions), however this is not critical: I have confirmed the filter works the same either way. Thanks for the catch, Scruffie!

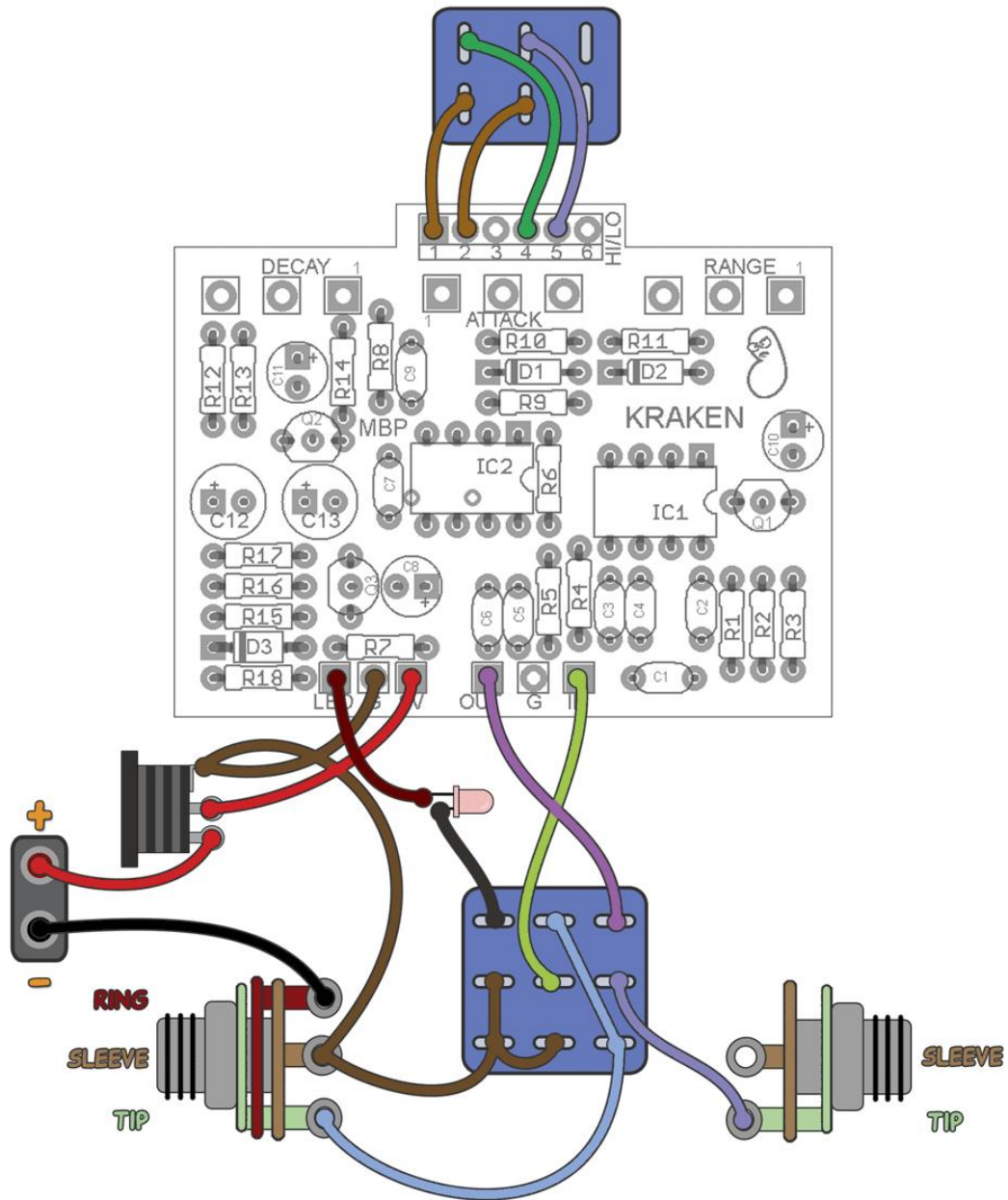
1590B Drill Template (fabbed PCB)

4.64" W x 6.69" H



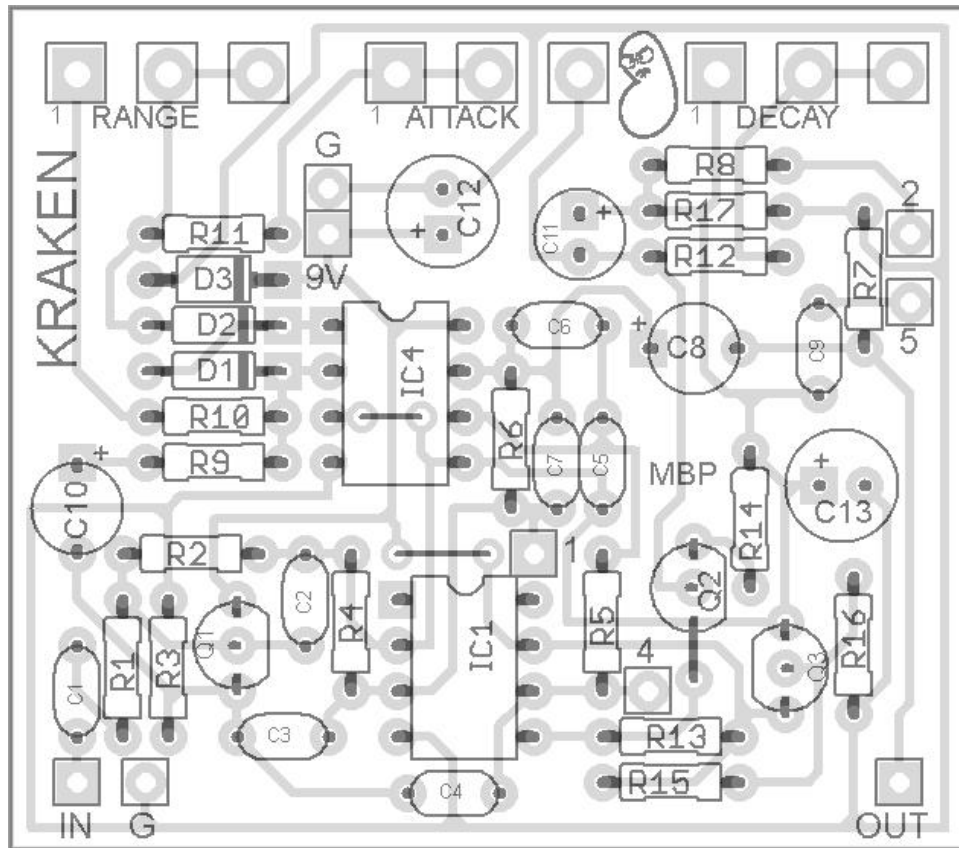
This template is approximate.

Wiring

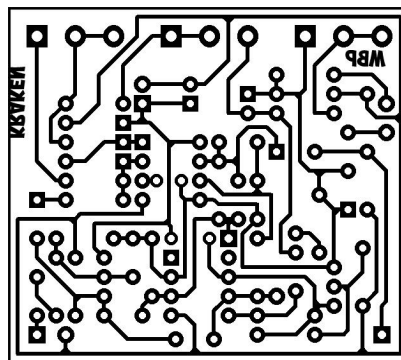


Pads 3 and 6 of the Hi Lo switch are not wired to anything.

Single Sided Layout



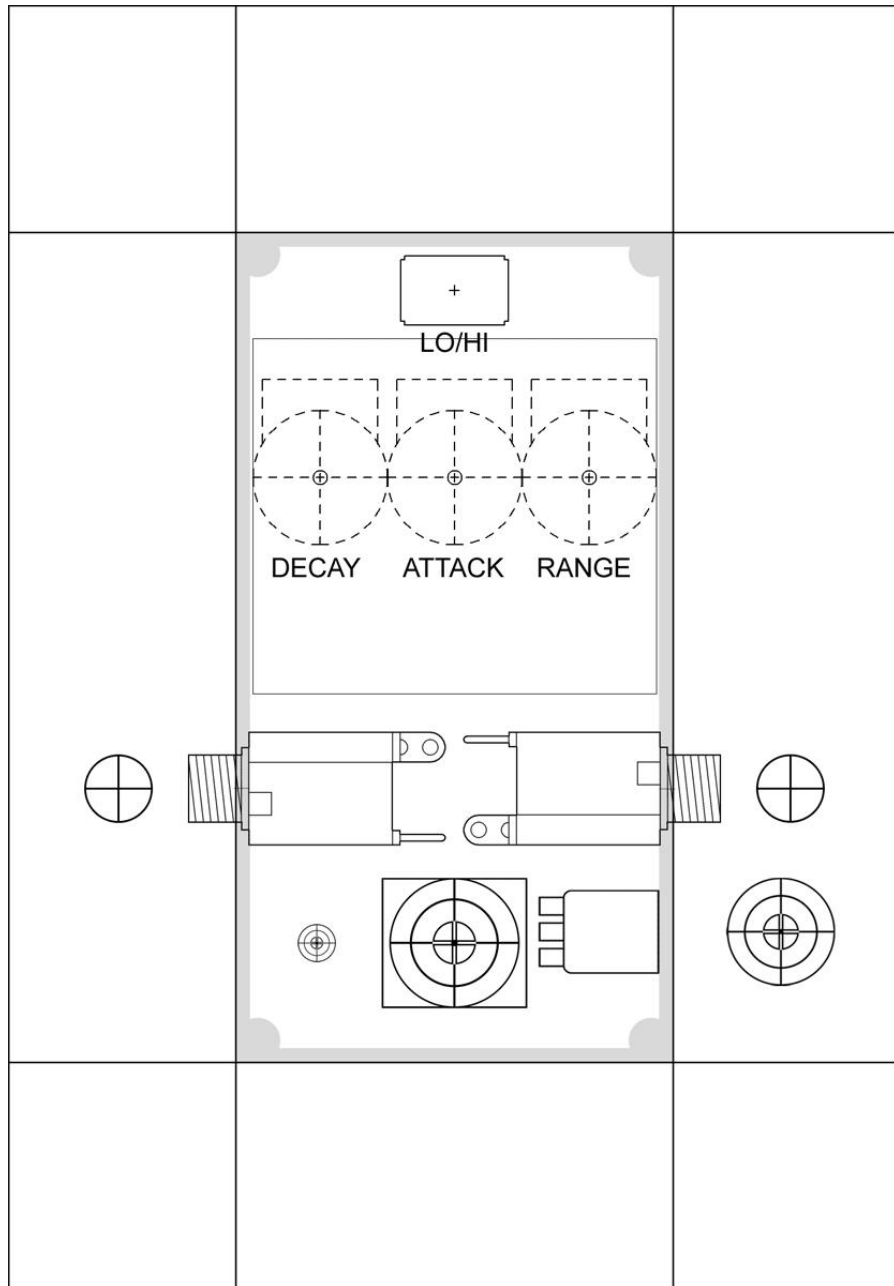
2.10"W x 1.85"H



R18 (the LED current limiting resistor) is not present in the single sided layout.

1590B Drill Template (Single Sided PCB)

4.64" W x 6.69" H



This template is approximate.