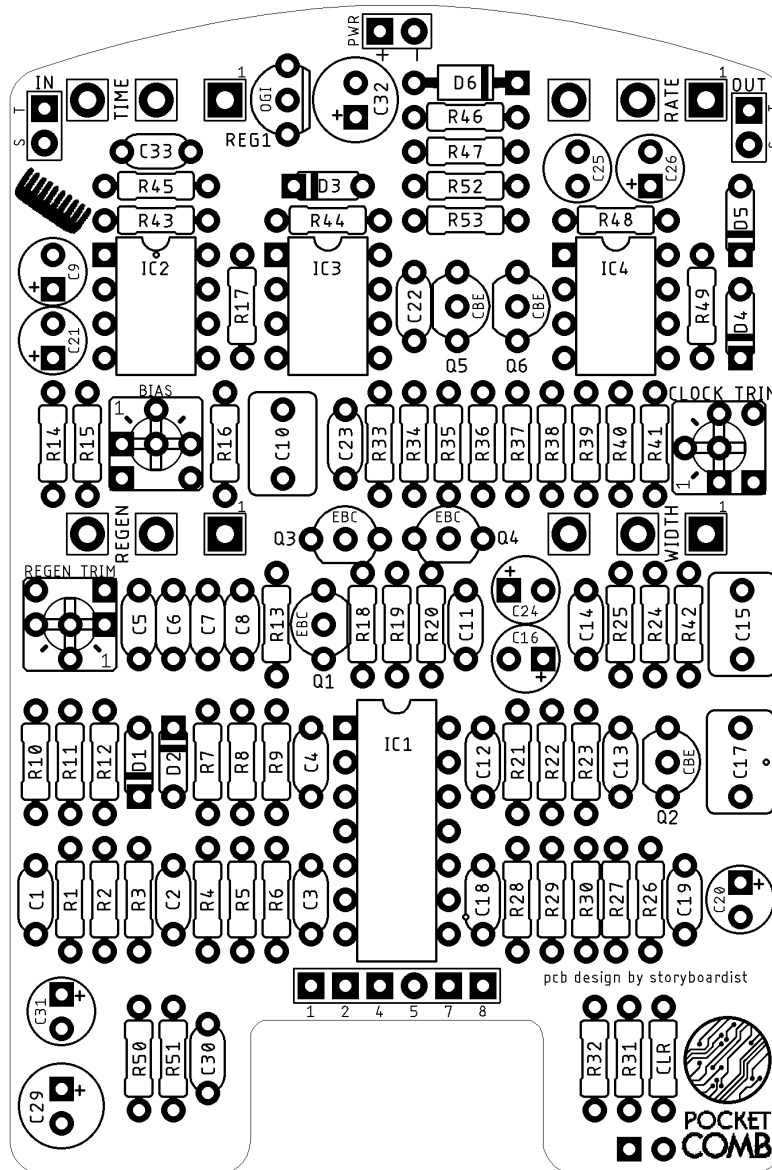


# POCKET COMB

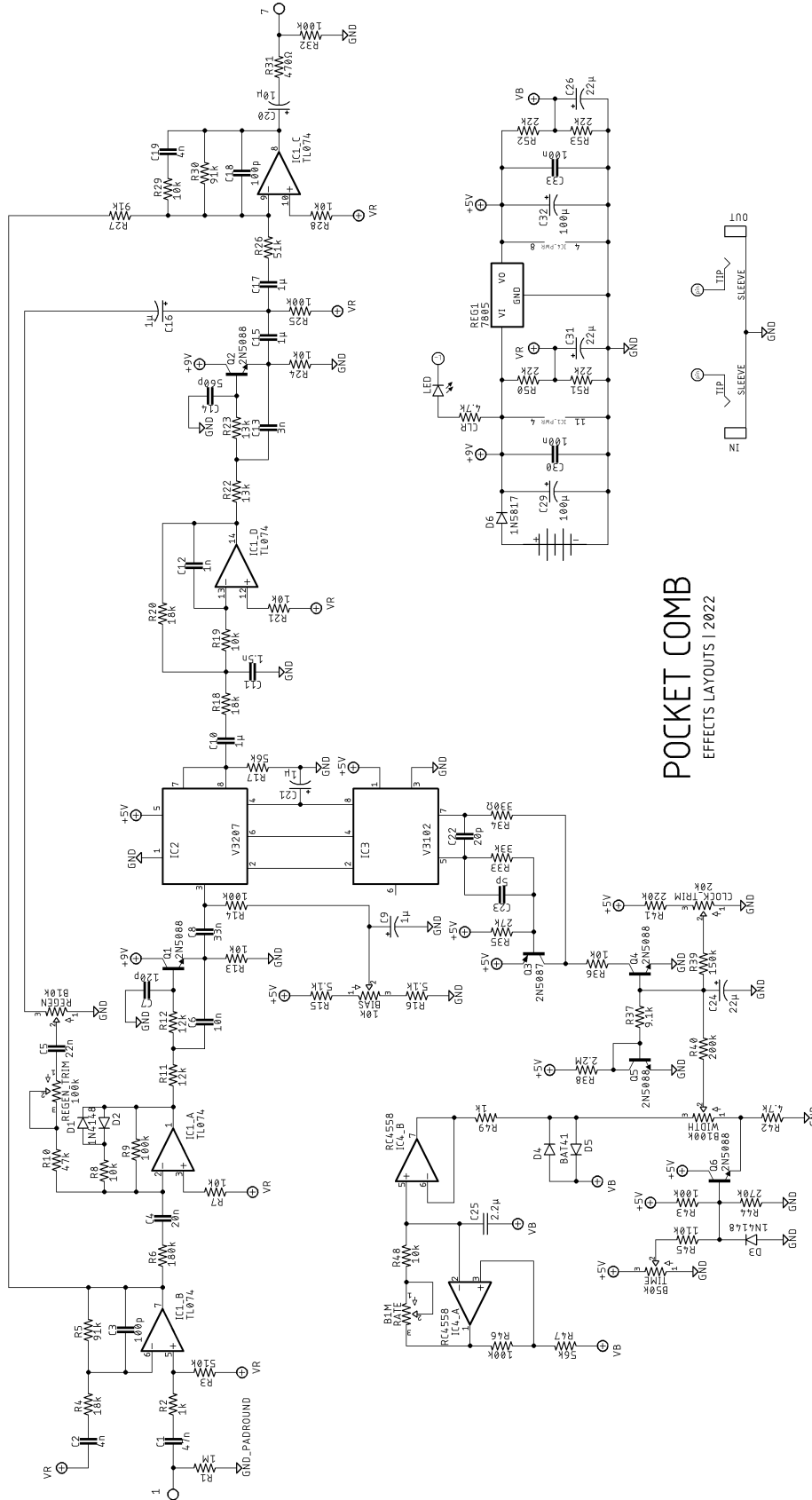
## DESCRIPTION

The POCKET COMB is an all analog flanger inspired by the Ibanez FL9, but with the [Relaxation LFO](#) modified to create a sine(-ish) wave. It utilizes the 3207 and 3102 BBD chipset like the original FL9 and creates a noise-free flange.

## LAYOUT



# SCHEMATIC



POCKET COMB  
EFFECTS LAYOUTS | 2022

## BOM

### Resistors

R1	1M
R2	1k
R3	510k
R4	18k
R5	91k
R6	180k
R7	10k
R8	10k
R9	100k
R10	47k
R11	12k
R12	12k
R13	10k
R14	100k
R15	5.1k
R16	5.1k
R17	56k
R18	18k
R19	10k
R20	18k
R21	10k
R22	13k
R23	13k
R24	10k
R25	100k
R26	51k
R27	91k
R28	10k
R29	10k
R30	91k
R31	470Ω
R32	100k
R33	33k
R34	330Ω
R35	27k
R36	10k
R37	9.1k
R38	2.2M
R39	150k
R40	200k
R41	220k
R42	4.7k
R43	100k

R44	270k
R45	110k
R46	100k
R47	56k
R48	10k
R49	1k
R50	22k
R51	22k
R52	22k
R53	22k
R54	22k
CLR	4.7k

### Capacitors

C1	47n
C2	3.9n
C3	100p
C4	20n
C5	22n
C6	10n
C7	120p
C8	33n
C9	1μ
C10	1μ
C11	1.5n
C12	1n
C13	3.3n
C14	560p
C15	1μ
C16	1μ
C17	1μ
C18	100p
C19	3.9n
C20	10μ
C21	1μ
C22	20p
C23	5p
C24	22μ
C25	2.2μ
C26	22μ
C29	100μ
C30	100n
C31	22μ
C32	100μ

C33	100n
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#### Semiconductors

D1	1N4148
D2	1N4148
D3	1N4148
D4	BAT41
D5	BAT41
D6	1N5817
IC1	TL074
IC2	MN3207
IC3	MN3102
IC4	RC4558
LED	3 or 5mm LED
Q1	2N5088
Q2	2N5088
Q3	2N5087
Q4	2N5088
Q5	2N5088
Q6	2N5088
REG1	7805

#### Electromechanical

Bias	10k
Clock_Trim	20k
Rate	B1M
Regen	B10k
Regen_Trim	100k
Time	B50k
Width	B100k

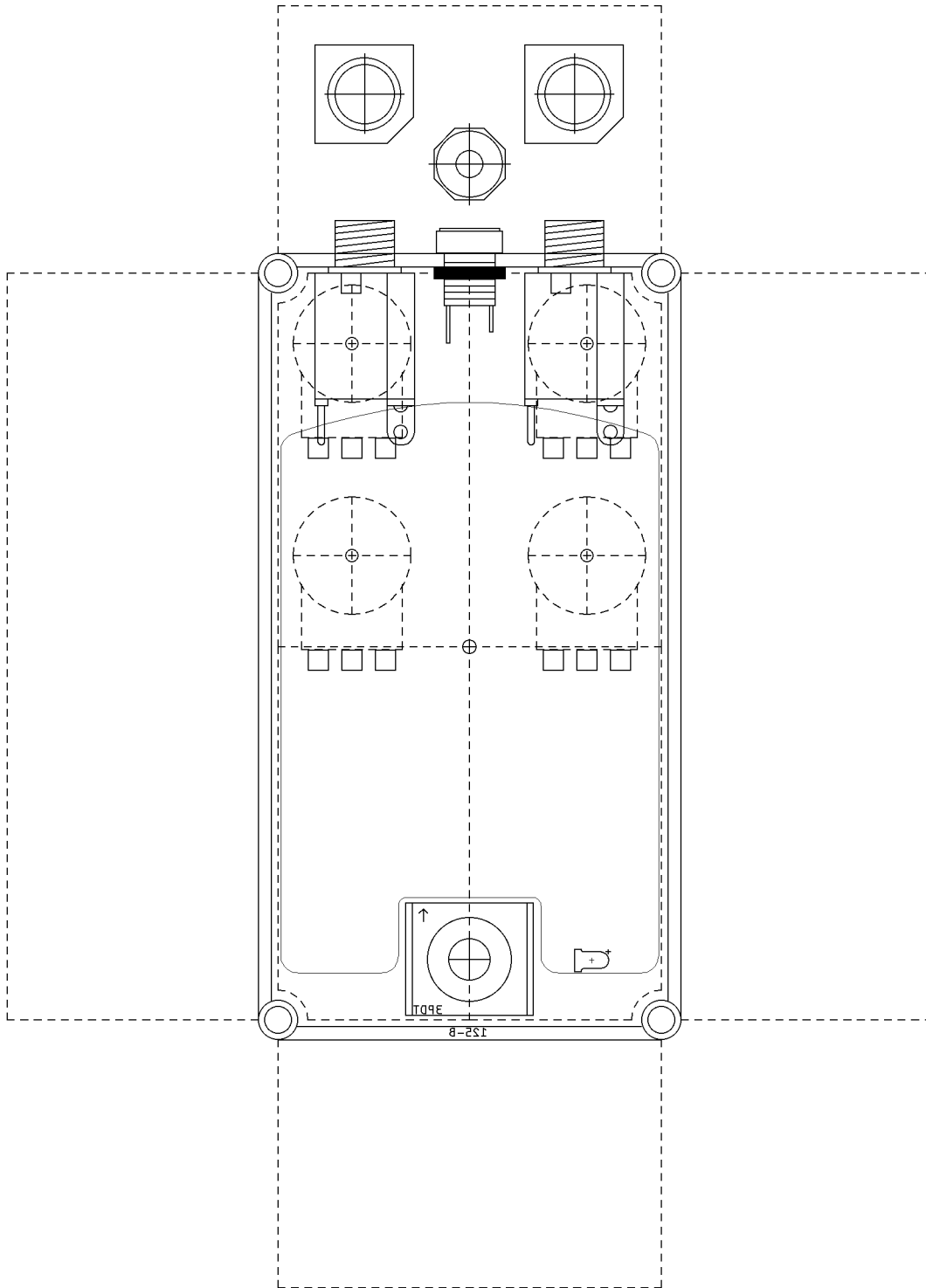
Note: 2N3904/3906 are good subs for the NPN/PNP transistors. D4-5 smooth out the triangle wave to a sine wave. Germanium diodes work well too. Didn't like the results I got with 1N4148s, but YMMV. Sockets are your friends. Also lowering the value of C25 increase the minimum speed of the LFO. Higher value = slower LFO. C25 does need to be non-polar though.

#### SHOPPING LIST

Value	Type (suggested)	Quantity
330Ω	¼ watt metal or carbon film	1
470Ω	¼ watt metal or carbon film	1
1k	¼ watt metal or carbon film	2
4.7k	¼ watt metal or carbon film	2
5.1k	¼ watt metal or carbon film	2
9.1k	¼ watt metal or carbon film	1
10k	¼ watt metal or carbon film	10
12k	¼ watt metal or carbon film	2
13k	¼ watt metal or carbon film	2
18k	¼ watt metal or carbon film	3
22k	¼ watt metal or carbon film	4
27k	¼ watt metal or carbon film	1
33k	¼ watt metal or carbon film	1
47k	¼ watt metal or carbon film	1
51k	¼ watt metal or carbon film	1
56k	¼ watt metal or carbon film	2
91k	¼ watt metal or carbon film	3
100k	¼ watt metal or carbon film	6
110k	¼ watt metal or carbon film	1
150k	¼ watt metal or carbon film	1
180k	¼ watt metal or carbon film	1

200k	¼ watt metal or carbon film	1
220k	¼ watt metal or carbon film	1
270k	¼ watt metal or carbon film	1
510k	¼ watt metal or carbon film	1
1M	¼ watt metal or carbon film	1
2.2M	¼ watt metal or carbon film	1
5p	Ceramic	1
20p	Ceramic	1
100p	Ceramic	2
120p	Ceramic	1
560p	Ceramic	1
1n	Film	1
1.5n	Film	1
3.3n	Film	1
3.9n	Film	2
10n	Film	1
20n	Film	1
22n	Film	1
33n	Film	1
47n	Film	1
100n	Ceramic	2
1μ	Film	3
1μ	Electrolytic (25v+)	3
2.2μ	Non-polarized Electrolytic	1
10μ	Electrolytic (25v+)	1
22μ	Electrolytic (25v+)	3
100μ	Electrolytic (25v+)	2
1N4148	Silicon switching diode	3
1N5817	Schottky rectifier diode	1
BAT41	Schottky diode	2
2N5087	PNP BJT	1
2N5088	NPN BJT	5
7805	5v regulator (TO92 package)	1
LED	3 or 5mm	1
MN3102	Clock	1
MN3207	BBD	1
TL074	Quad opamp	1
RC4558	Dual opamp	1
10k	Trim pot	1
20k	Trim pot	1
100k	Trim pot	1
B10k	16mm right angle PC mount	1
B50k	16mm right angle PC mount	1
B100k	16mm right angle PC mount	1
B1M	16mm right angle PC mount	1

# DRILL TEMPLATE (125B)



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