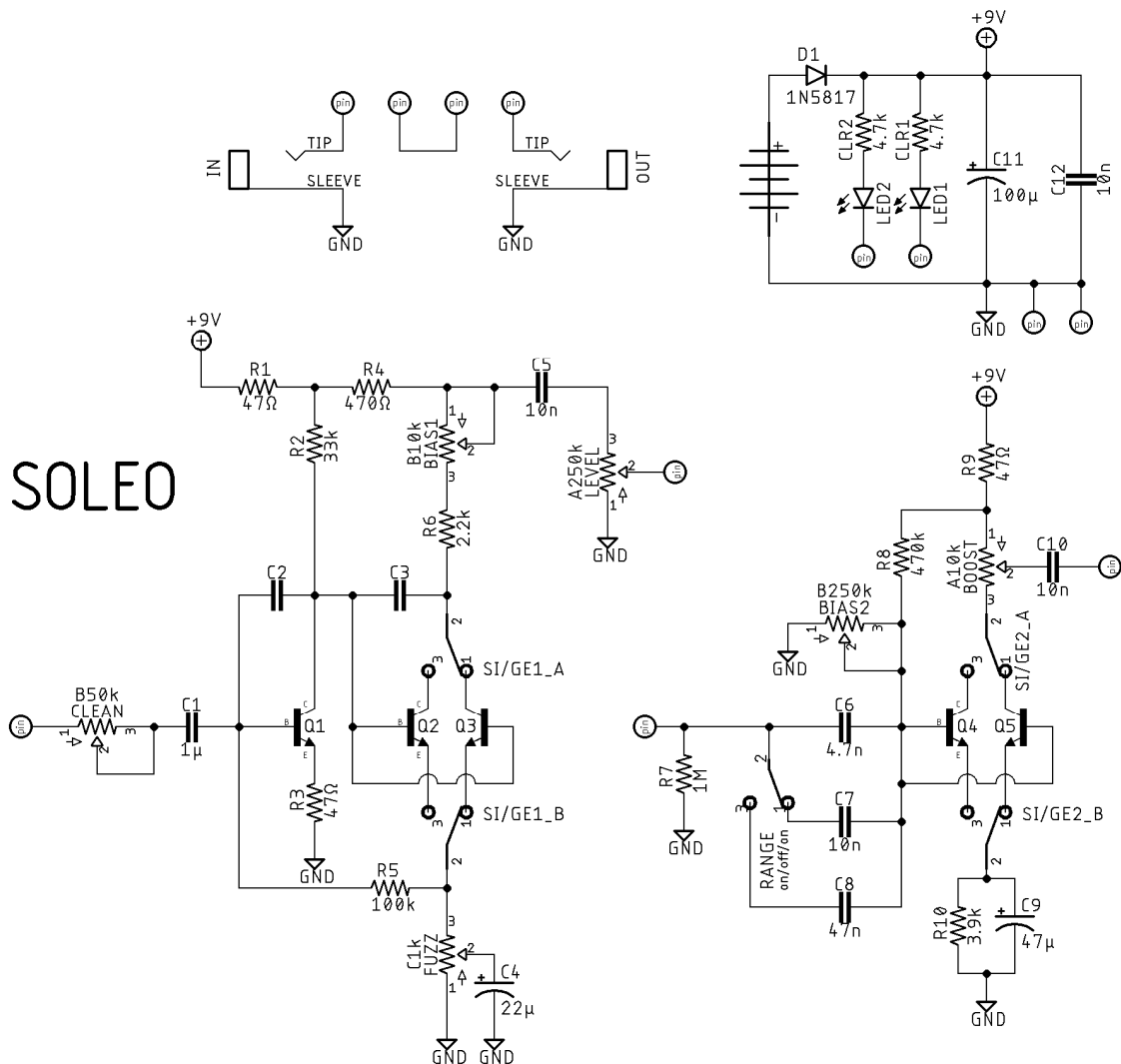




DESCRIPTION

The SOLEO is a 2-in-1 boost + fuzz effect, based mainly on the classic Fuzz Face and Rangemaster circuits, with a few modifications inspired by the Analogman Surface and Throbak Strangemaster. The fuzz has a pre-gain control to clean up the signal and optional low value capacitors between base and collector to smooth things out if you so desire. Both the boost and the second stage of the fuzz have transistors on a switch for silicon or germanium flavors as well as external bias controls. The boost section also has a 3-way toggle to change the input capacitor for thicker tone. Designed to fit in a 125B with top mounted jacks for a compact footprint on your pedalboard.

SCHEMATIC



BOM

Resistors

R1	47Ω
R2	33k
R3	47Ω
R4	470Ω
R5	100k
R6	2.2k
R7	1M
R8	470k
R9	47Ω
R10	3.9k
CLR1	4.7k
CLR2	4.7k

Capacitors

C1	1μ
C2*	47-470p
C3*	47-470p
C4	22μ
C5	10n
C6	4.7n
C7	10n
C8	47n
C9	47μ
C10	10n
C11	100μ
C12	10n

Semiconductors

D1	1N5817
LED1	3-5mm

LED2	3-5mm
Q1	NPN Germanium
Q2	NPN Germanium
Q3	NPN Silicon
Q4	NPN Germanium
Q5	NPN Silicon

Electromechanical

Bias1	B10k
Bias2	B250k
Boost	A10k
Clean	B50k
Fuzz	C1k
Level	A250k
Range	SPDT on/off/on
Si/Ge1	DPDT on/on
Si/Ge2	DPDT on/on

Notes

*C2-3 are optional for signal smoothing.

Experiment with low value caps.

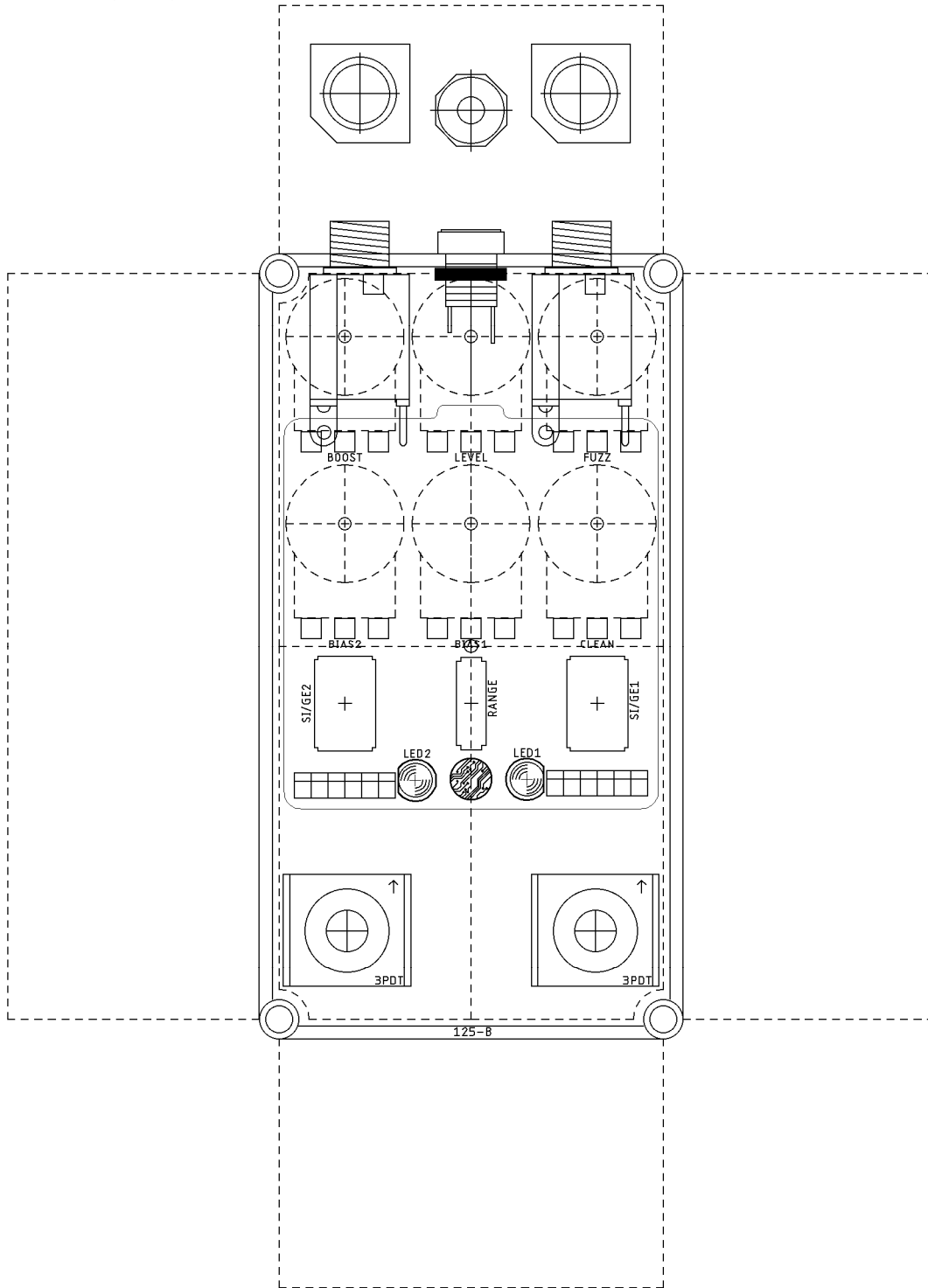
Suggested hFE ranges for Q1 and Q2 (germaniums) are 70 and 100 respectively. Q3 (silicon) should also be relatively low hFE, but higher than the hFE of Q2. For Q4, hFE should be around 90, and Q5 should be a lower hFE. In my prototype build I used Russian MP38s for Q1-2 and Q4, and 2N2222As for Q3 and Q5. Use sockets and experiment with what sounds best to you.

SHOPPING LIST

Value	Type (suggested)	Quantity
47Ω	¼ watt metal or carbon film	3
470Ω	¼ watt metal or carbon film	1
2.2k	¼ watt metal or carbon film	1
3.9k	¼ watt metal or carbon film	1
4.7k	¼ watt metal or carbon film	2
33k	¼ watt metal or carbon film	1
100k	¼ watt metal or carbon film	1
470k	¼ watt metal or carbon film	1

1M	¼ watt metal or carbon film	1
47-470p	Ceramic	2
4.7n	Film	1
10n	Film	4
47n	Film	1
1µ	Film	1
22µ	Electrolytic (35v or higher)	1
47µ	Electrolytic (35v or higher)	1
100µ	Electrolytic (35v or higher)	1
1N5817	Schottky rectifier diode	1
LED	3 or 5mm	2
NPN Germanium	BJT	3
NPN Silicon	BJT	2
A10k	16mm right angle PC mount	1
A250k	16mm right angle PC mount	1
B10k	16mm right angle PC mount	1
B50k	16mm right angle PC mount	

DRILL TEMPLATE (125B)



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