

EF120 OVERDRIVE

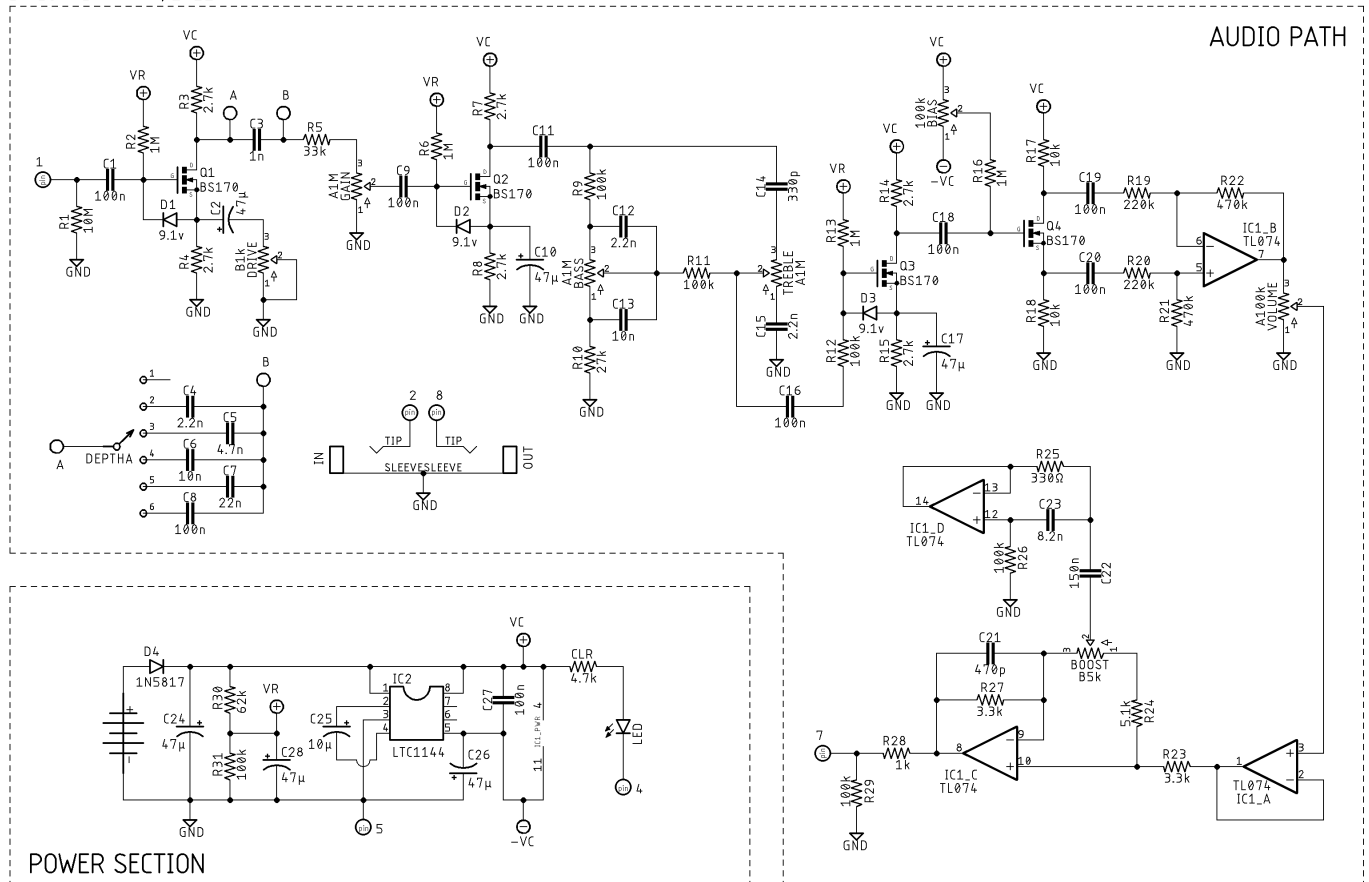
DESCRIPTION

The EF120 is a MOSFET-base emulator of an overdriven MATAMP GT120, based on the Dunwich DA120. Based on how the three gain controls are set, you can get anything from low-medium gain drive, all the way up fully saturated high gain tones of an overdriven amplifier. The Depth rotary switch changes the value of the output cap on the first MOSFET stage, and more tonal variation is achieved with the Baxendal tone stack between the second and third MOSFET stages. The original DA120 uses an LTC1144 for creating the bi-polar supply that used for IC1 so that an 18v supply could be used. If you're planning on just sticking to 9v, a typical MAX1044 can be used instead.

SCHEMATIC

EF120 OVERDRIVE

EFFECTS LAYOUTS | 2022



BOM

Resistors

R1	10M
R2	1M
R3	2.7k
R4	2.7k
R5	33k
R6	1M
R7	2.7k
R8	2.7k
R9	100k
R10	27k
R11	100k
R12	100k
R13	1M
R14	2.7k
R15	2.7k
R16	1M
R17	10k
R18	10k
R19	220k
R20	220k
R21	470k
R22	470k
R23	3.3k
R24	5.1k
R25	330Ω
R26	100k
R27	3.3k
R28	1k
R29	100k
R30	62k
R31	100k
CLR	4.7k

Capacitors

C1	100n
C2	47μ
C3	1n
C4	2.2n
C5	4.7n
C6	10n
C7	22n
C8	100n

C9	100n
C10	47μ
C11	100n
C12	2.2n
C13	10n
C14	330p
C15	2.2n
C16	100n
C17	47μ
C18	100n
C19	100n
C20	100n
C21	470p
C22	150n
C23	8.2n
C24	47μ
C25	10μ
C26	47μ
C27	100n
C28	47μ

Semiconductors

D1	1N4739A (9.1v)
D2	1N4739A (9.1v)
D3	1N4739A (9.1v)
D4	1N5817
IC1	TL074
IC2	LTC1144
LED	3 or 5mm
Q1	BS170
Q2	BS170
Q3	BS170
Q4	BS170

Electromechanical

BASS	A1M
BIAS	100k
BOOST	B5k
DEPTH	2P6T
DRIVE	B1k
GAIN	A1M
TREBLE	A1M
VOLUME	A100k

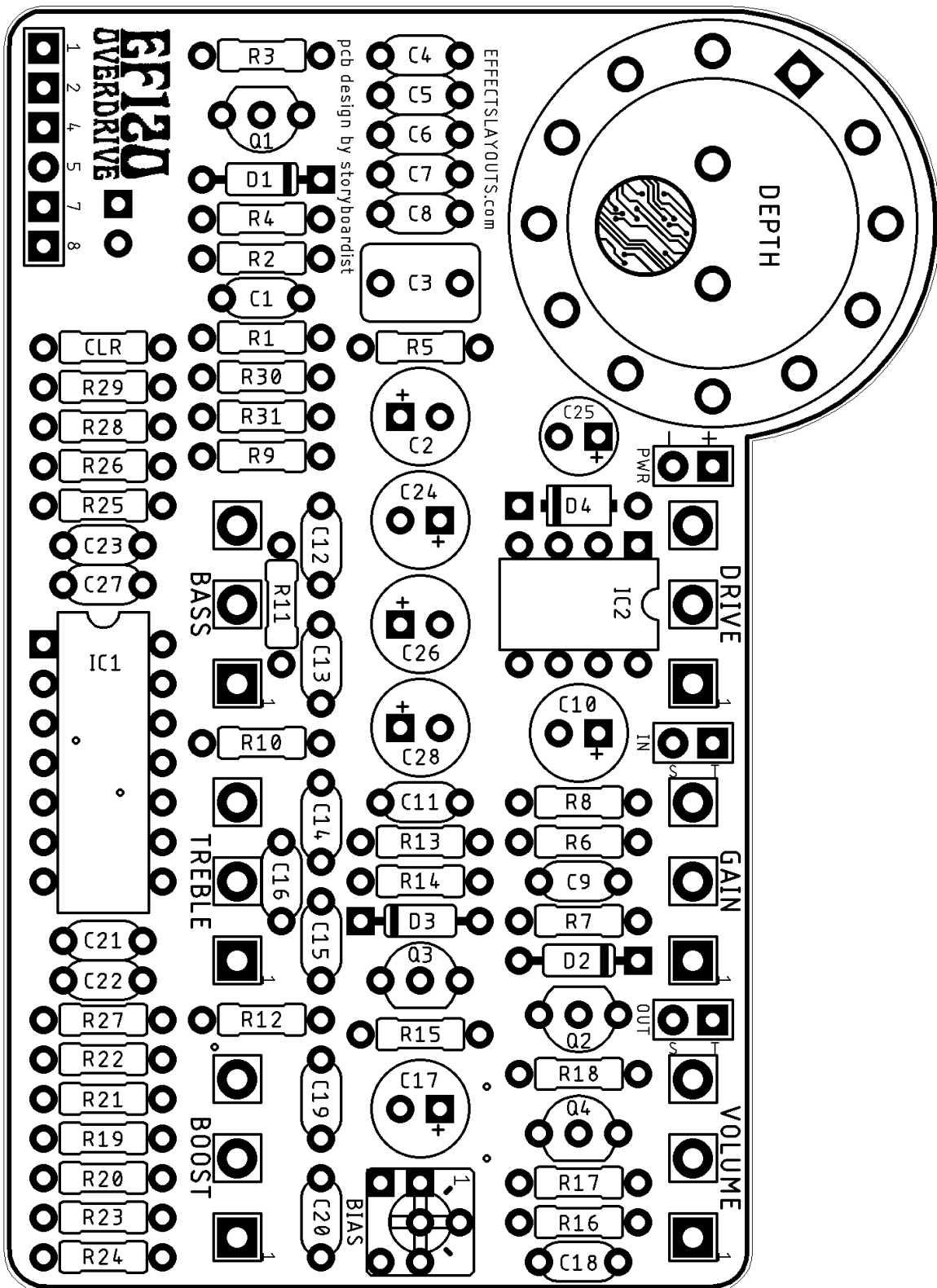
Note

Set Bias trimmer to approximately +4.5v and then adjust by ear if necessary. Voltage in my prototype was +4.63v, YMMV.

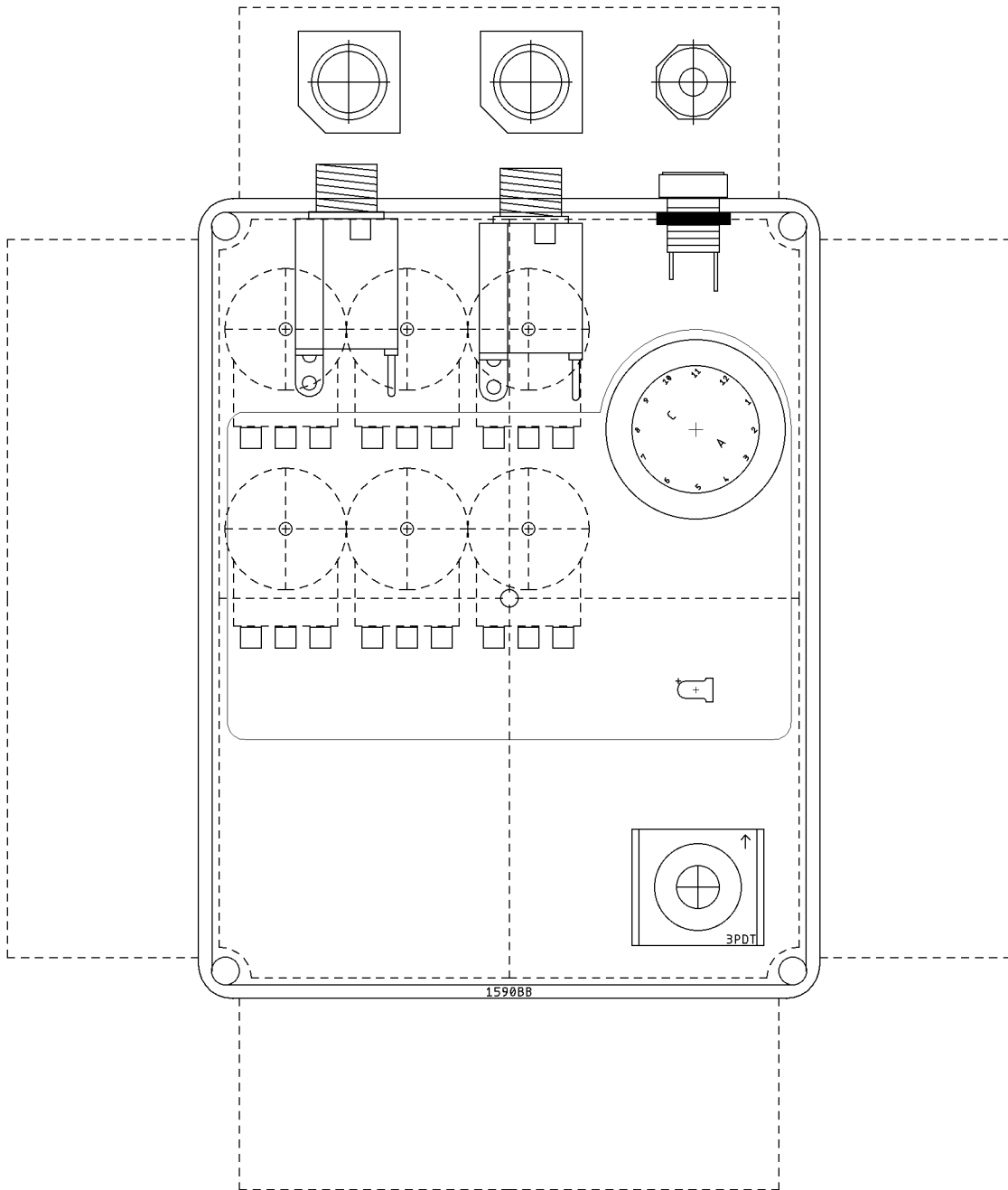
SHOPPING LIST

Value	Type (suggested)	Quantity
330Ω	¼ watt metal or carbon film	1
1k	¼ watt metal or carbon film	1
2.7k	¼ watt metal or carbon film	6
3.3k	¼ watt metal or carbon film	2
4.7k	¼ watt metal or carbon film	1
5.1k	¼ watt metal or carbon film	1
10k	¼ watt metal or carbon film	2
27k	¼ watt metal or carbon film	1
33k	¼ watt metal or carbon film	1
62k	¼ watt metal or carbon film	1
100k	¼ watt metal or carbon film	6
220k	¼ watt metal or carbon film	2
470k	¼ watt metal or carbon film	2
1M	¼ watt metal or carbon film	4
10M	¼ watt metal or carbon film	1
330p	Ceramic	1
470p	Ceramic	1
2.2n	Film	3
4.7n	Film	1
8.2n	Film	1
10n	Film	2
22n	Film	1
100n (C27)	Ceramic	1
100n	Film	8
150n	Film	1
1μ	Film	1
10μ	Electrolytic (50v)	1
47μ	Electrolytic (50v)	6
1N4739A	9.1v zener diode	3
1N5817	Schottky rectifier diode	1
BS170	MOSFET	4
LED	3 or 5mm	1
LTC1144	Voltage doubler	1
TL074	Quad op amp	1
2P6T	Rotary switch	1
A100k	16mm right angle PC mount	1
A1M	16mm right angle PC mount	3
B1k	16mm right angle PC mount	1
B5k	16mm right angle PC mount	1

LAYOUT



DRILL TEMPLATE (1590BB)



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Not for non-peer to peer resale.