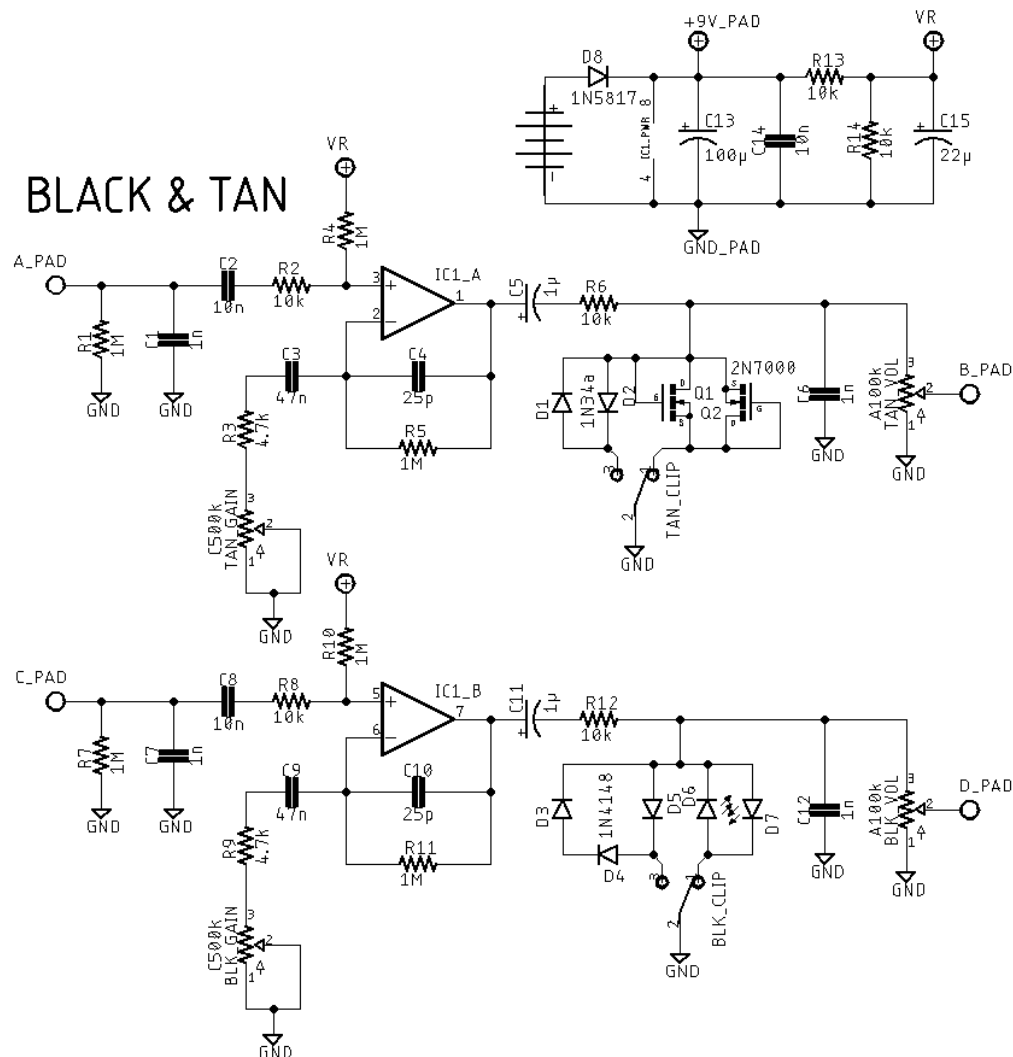


BLACK AND TAN

DESCRIPTION

There are a multitude of variations of the Distortion+/OD250 circuit. One of the earliest was the Ross Distortion made in the late 70-early 80s. The biggest variation the Ross examples had from the original circuit was the use of a JRC4558. Since this is a dual opamp, only one side of the chip was used. There were 2 versions manufactured by Ross, the original tan box, made in USA version, and the later black box, made in Taiwan version. The tan version used 2, germanium diodes for symmetrical clipping, while the black version used 3, silicon diodes for asymmetrical clipping. The BLACK & TAN combines both versions into one box, with each version using half of the JRC4558 op amp. Added clipping options on each version give extra tonal options. The BLACK & TAN takes inspiration from the Earthquaker Devices Grey Channel in general concept and switching. One footswitch selects between the Black or Tan sides, while the other turns the unit on and off.

SCHEMATIC



BILL OF MATERIALS

Resistors

R1	1M
R2	10k
R3	4.7k
R4	1M
R5	1M
R6	10k
R7	1M
R8	10k
R9	4.7k
R10	1M
R11	1M
R12	10k
R13	10k
R14	10k
CLR1	4.7k
CLR2	4.7k

Capacitors

C1	1n
C2	10n
C3	47n
C4	25p
C5	1μ
C6	1n
C7	1n
C8	10n
C9	47n
C10	25p
C11	1μ

C12	1n
C13	100μ
C14	10n
C15	22μ

Semiconductors

D1	1N34A
D2	1N34A
D3	1N4148
D4	1N4148
D5	1N4148
D6	3mm green led
D7	3mm green led
D8	1N5817
IC1	JRC4558
LED1	5mm LED
LED2	5mm Bi-color common cathode
Q1	2N7000
Q2	2N7000

Electromechanical

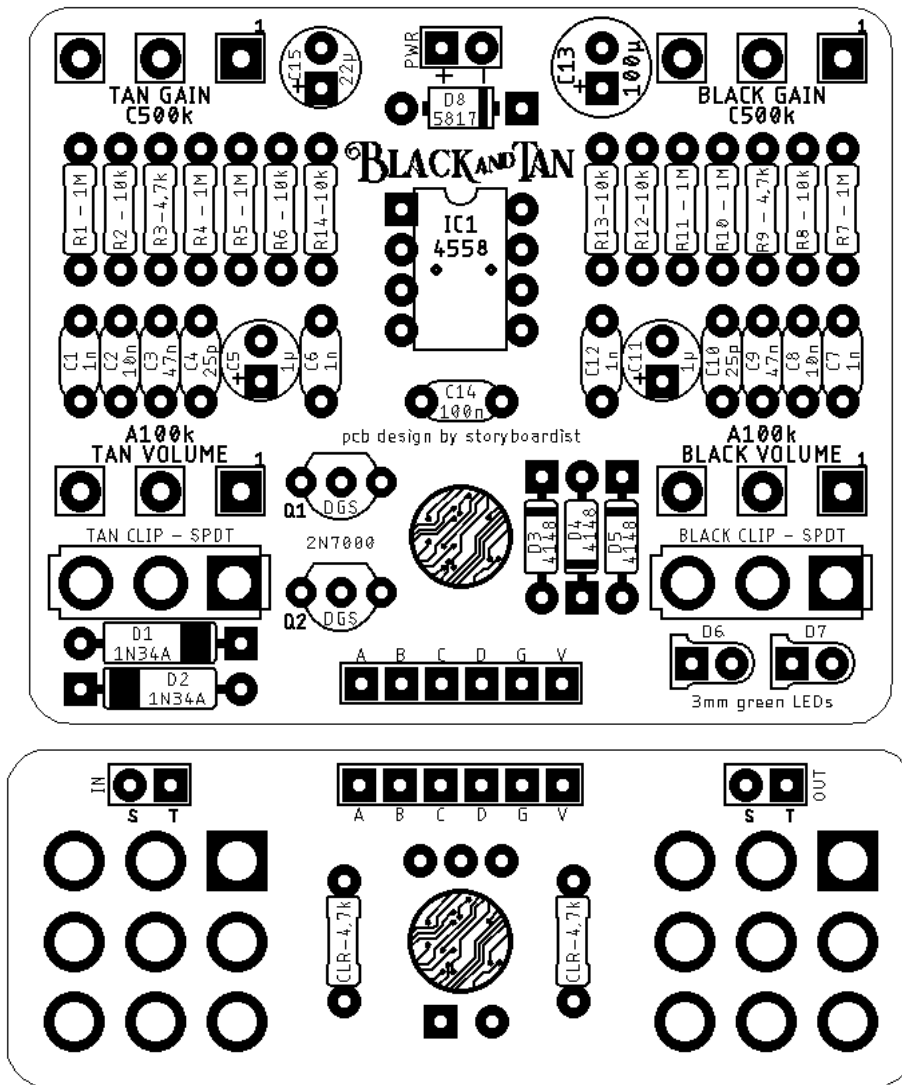
BLK_CLIP	SPDT on/off/on
BLK_GAIN	C500k
BLK_VOL	A100k
TAN_CLIP	SPDT on/off/on
TAN_GAIN	C500k
TAN_VOL	A100k
Activate	3PDT footswitch
Channel	3PDT footswitch

SHOPPING LIST

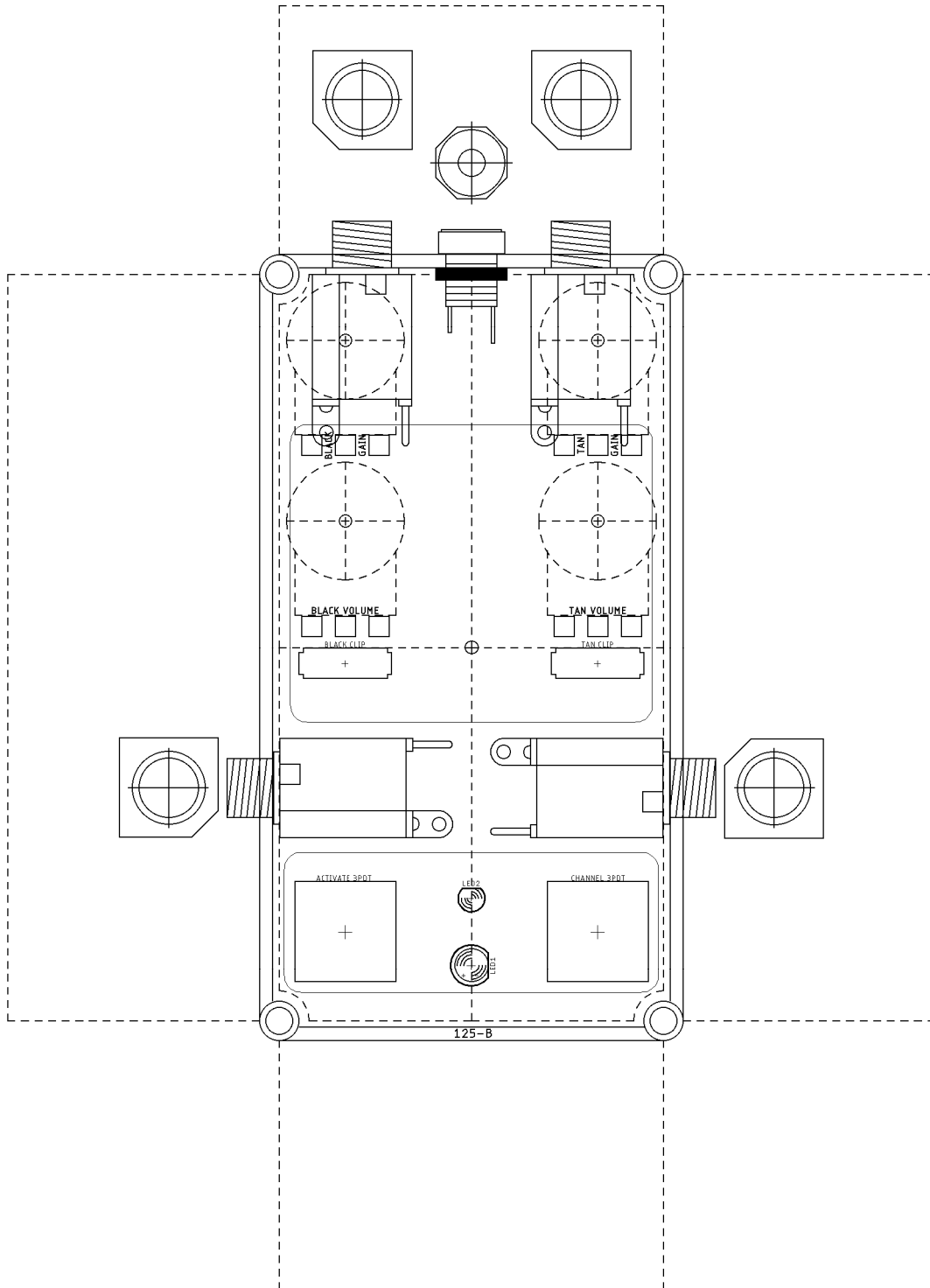
Value	Type (suggested)	Quantity
4.7k	¼ watt metal or carbon film	4
10k	¼ watt metal or carbon film	6
1M	¼ watt metal or carbon film	6
25p	Ceramic (63v or higher)	2
1n	Film (63v or higher)	4
10n	Film (63v or higher)	3
47n	Film (63v or higher)	2
1μ	Electrolytic (35v or higher)	2
22μ	Electrolytic (35v or higher)	1

100μ	Electrolytic (35v or higher)	1
1N34A	Germanium diode	2
1N4148	Silicon diode	3
1N5817	Schotky rectifier dioe	1
2N7000	MOSFET	2
3mm green LED	Diffused	2
5mm LED		1
5mm Bi-color LED	Common cathode LED	1
JRC4558	Dual opamp	1
3PDT	Footswitch	2
A100k	16mm right angle PC mount	2
C500k	16mm right angle PC mount	2
SPDT	on/off/on toggle	2

LAYOUTS



DRILL TEMPLATE (125B)



Note: the option for side jacks. No need to drill both side and top jack holes.