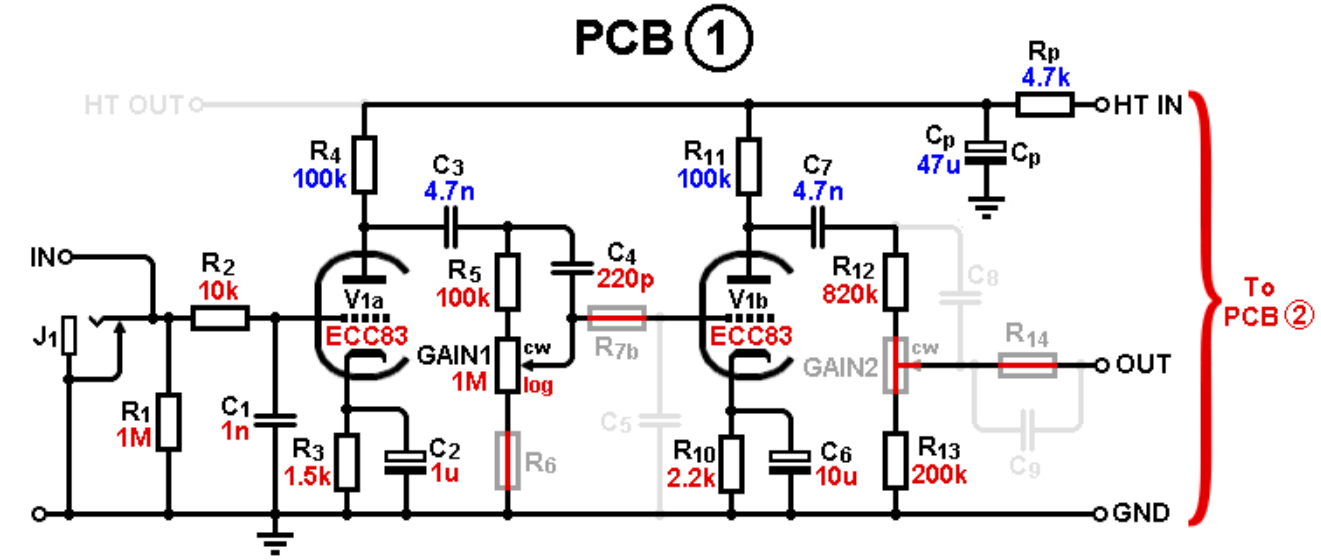
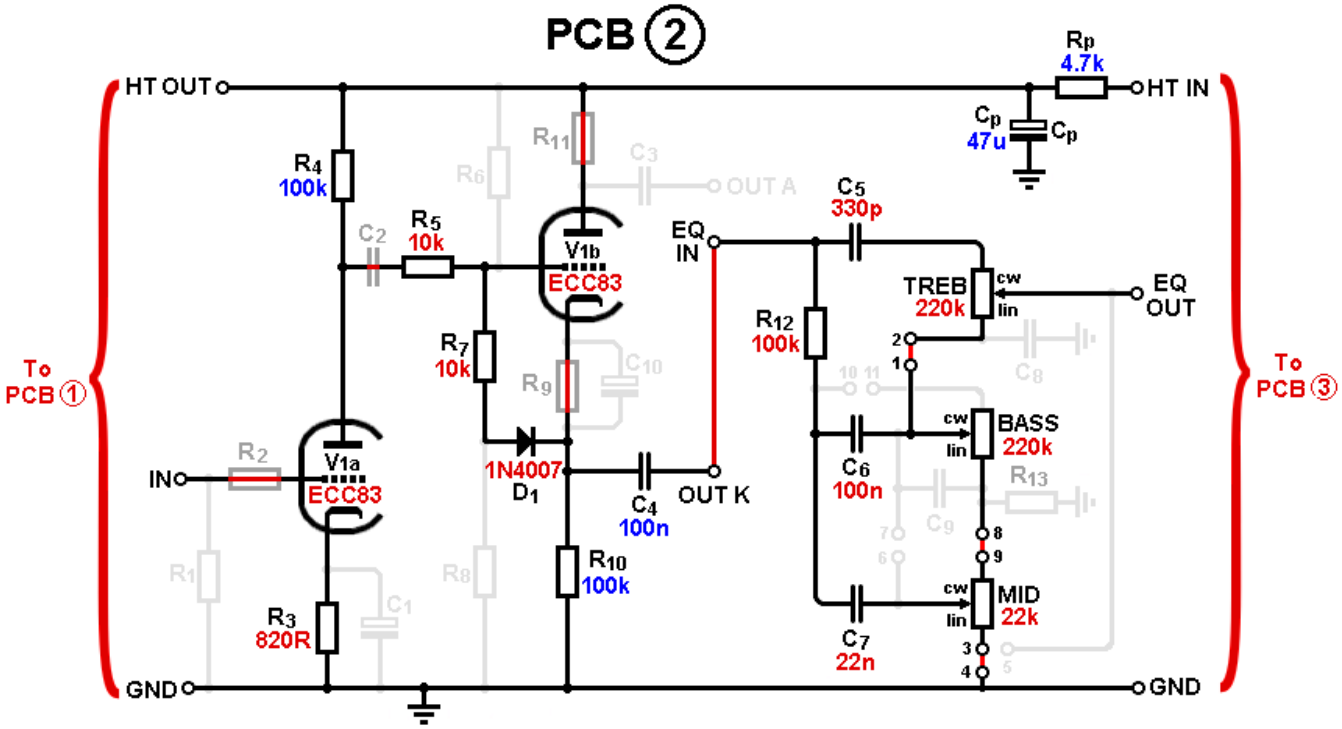
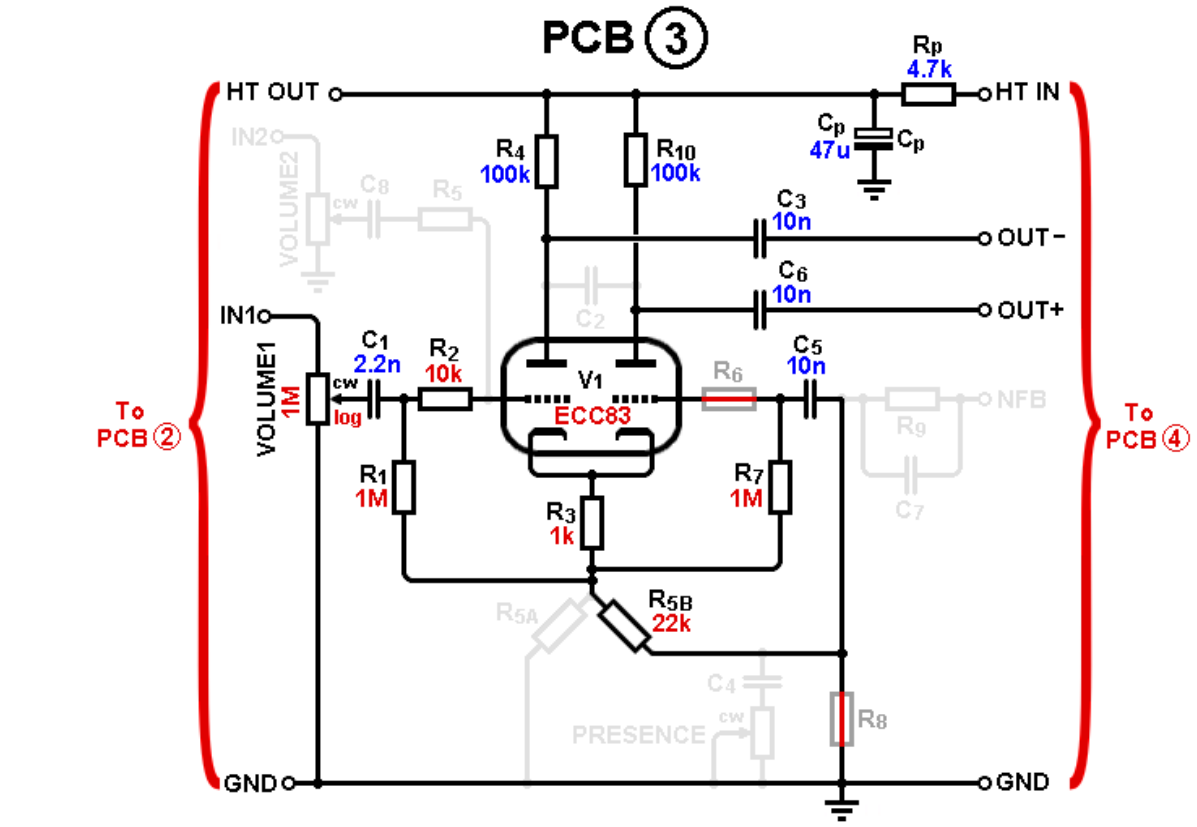
VWAC15: Push-Pull EL84 Guitar Amplifier

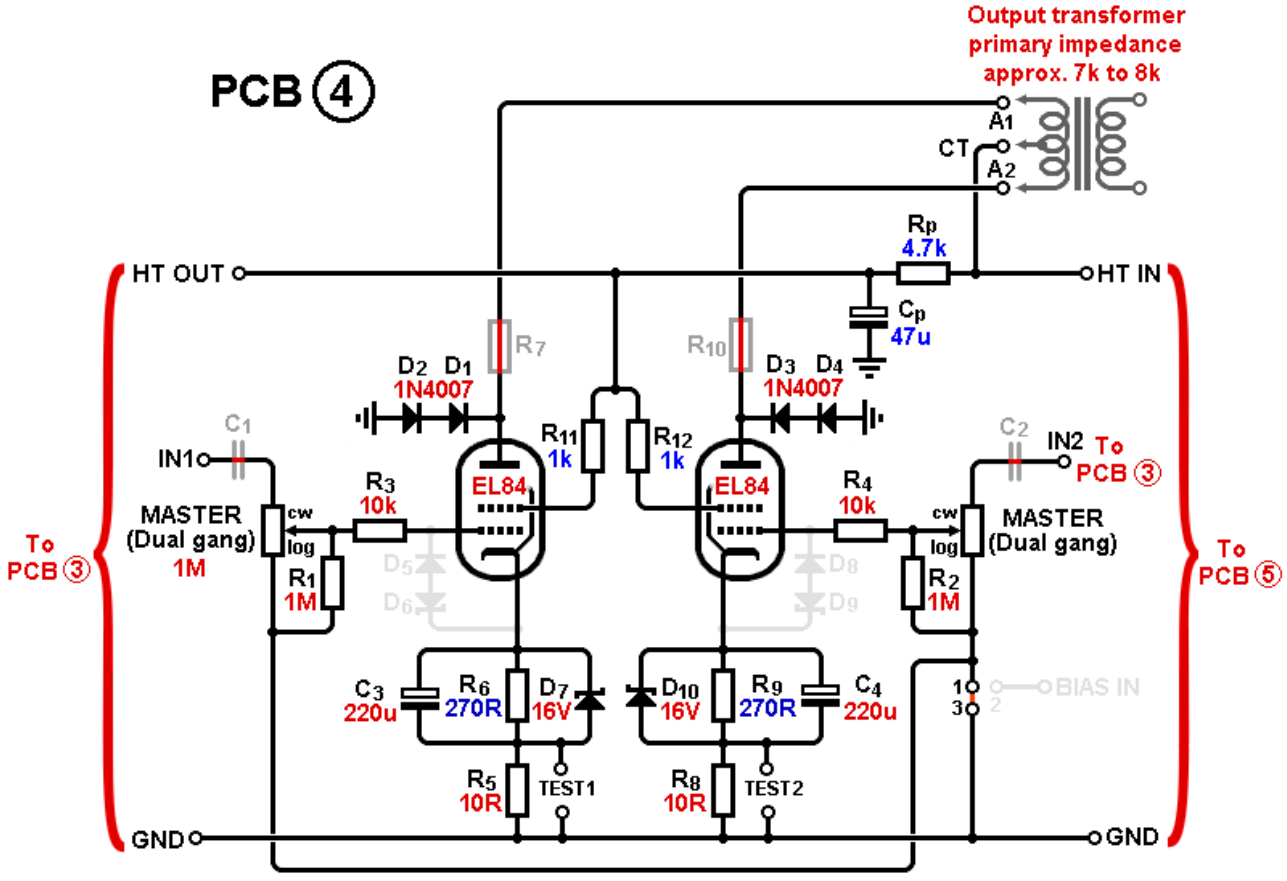
Suggested circuit using ValveWizard universal amp PCBs: basic set of five.

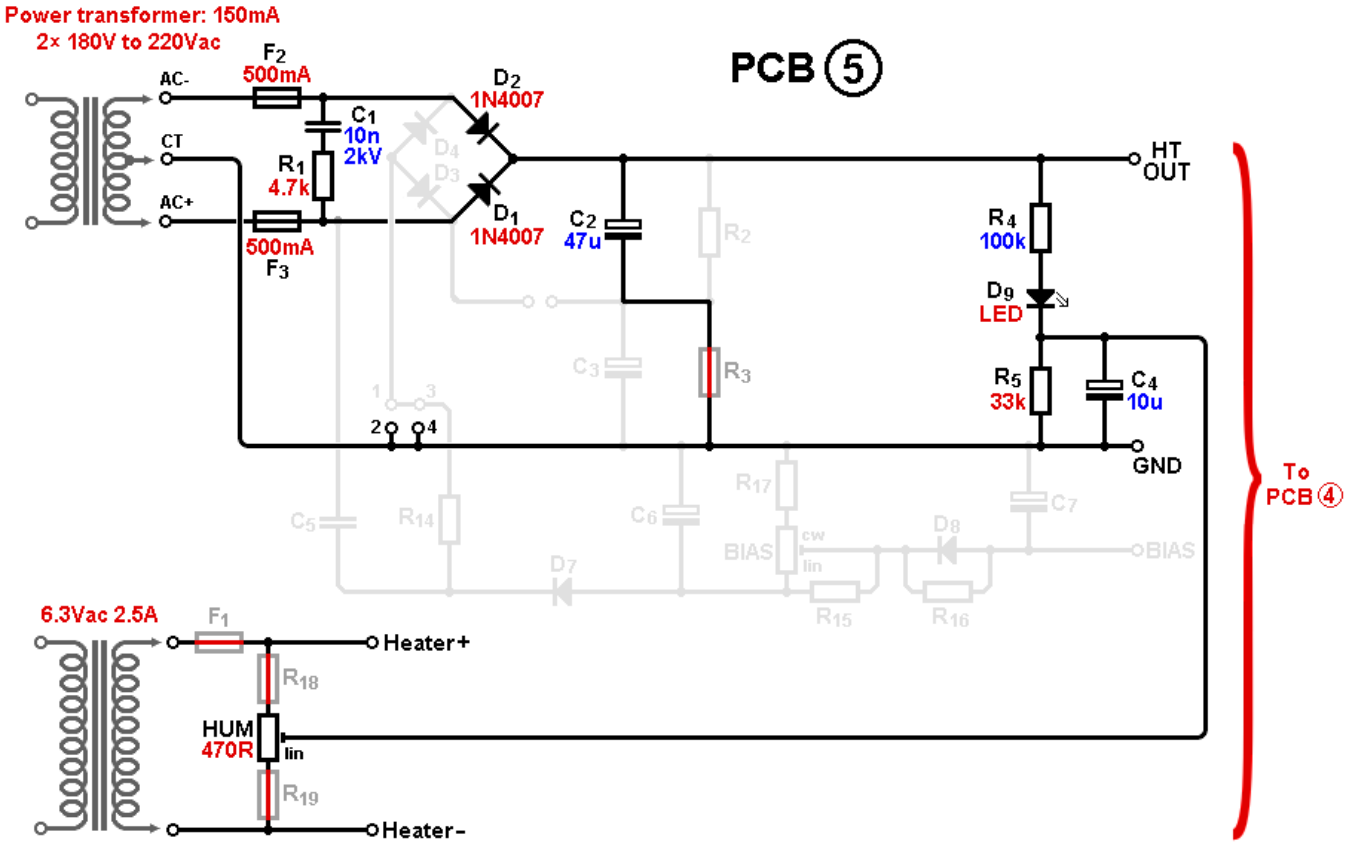
Low voltage capacitors and ¼W resistors shown in red. High voltage capacitors and 1W resistors shown in blue.






PCB ③
HT OUT
HT IN
Rp
4.7k
Cp
47u
R4
100k
R10
100k
C3
10n
OUT−
C6
10n
OUT+
IN2
VOLUME2
C8
R5
C2
IN1
VOLUME1
1M
C1
2.2n
R2
10k
V1
ECC83
R6
C5
10n
NFB
R9
C7
R1
1M
R7
1M
R3
1k
R5B
22k
R5A
C4
PRESENCE
R8
GND
GND
To
PCB ②
To
PCB ④


PCB ④
Output transformer
primary impedance
approx. 7k to 8k
A1
CT
A2
Rp
4.7k
HT OUT
HT IN
Cp
47u
R7
R10
D2 D1
1N4007
D3 D4
1N4007
C1
IN1
R11
1k
R12
1k
C2
IN2
To
PCB ③
R3
10k
EL84
EL84
R4
10k
MASTER
(Dual gang)
1M
cw
log
R1
1M
D5
D6
D8
D9
R2
1M
MASTER
(Dual gang)
To
PCB ③
To
PCB ⑤
C3
220u
R6
270R
D7
16V
D10
16V
R9
270R
C4
220u
BIAS IN
R5
10R
TEST1
R8
10R
TEST2
GND
GND


Power transformer: 150mA
2× 180V to 220Vac
PCB ⑤
AC-
CT
AC+
F2
500mA
C1
10n
2kV
R1
4.7k
500mA
F3
D2
1N4007
D1
1N4007
D4
D3
C2
47u
R2
C3
R3
HT
OUT
R4
100k
D9
LED
R5
33k
C4
10u
GND
To
PCB ④
1
3
2
4
C5
R14
C6
R17
BIAS
cw
lin
D8
C7
BIAS
D7
R15
R16
6.3Vac 2.5A
F1
Heater+
R18
HUM
470R
lin
R19
Heater-

All resistors 1/4W unless noted
All capacitors low voltage (e.g. 16V) unless noted

PCB1

Part	Value	Note
R1	1M	
R2	10k	
R3	1.5k	
R4	100k	1W
R5	100k	
R6	0R link	
R7B	0R link	
R8	-	
R9	-	
R10	2.2k	
R11	100k	1W
R12	820k	
R13	200k	
R14	0R link	
Rp	4.7k	1W
GAIN1	1M	log
GAIN2	0R links	

Part	Value	Note
C1	1n	
C2	1u	
C3	4.7n	400V
C4	220p	
C5	-	
C6	10u	
C7	4.7n	400V
C8	-	
C9	-	
Cp	47u	400V

PCB2

Part	Value	Note
R1	-	
R2	0R link	
R3	820R	
R4	100k	1W
R5	10k	
R6	-	
R7	10k	
R8	-	
R9	0R link	
R10	100k	1W
Rp	4.7k	1W
TREBLE	220k	lin
MIDDLE	220k	lin
BASS	22k	lin

Part	Value	Note
C1	-	
C2	0R link	
C3	-	
C4	100n	400V
C5	330p	
C6	100n	
C7	22n	
C8	-	
C9	-	
C10	-	
Cp	47u	400V

D1	1N4007	

PCB3

Part	Value	Note
R1	1M	
R2	10k	
R3	1k	
R4	100k	1W
R5B	22k	
R6	0R link	
R7	1M	
R8	0R link	

Part	Value	Note
C1	2.2n	100V
C2	-	
C3	10n	400V
C4	-	
C5	10n	100V
C6	10n	400V
C7	-	
C8	-	

R9	-	
R10	100k	1W
Rp	4.7k	
VOLUME1	1M	log
VOLUME2	-	
PRESENCE	-	

Cp	47u	400V

PCB4

Part	Value	Note
R1	1M	
R2	1M	
R3	10k	
R4	10k	
R5	10R	
R6	270R	1W
R7	0R link	
R8	10R	
R9	270R	1W
R10	0R link	
R11	1k	1W
R12	1k	1W
Rp	4.7k	1W
MASTER	1M	log dual gang

Part	Value	Note
C1	0R link	
C2	0R link	
C3	220u	
C4	220u	
Cp	47u	400V

D1	1N4007	
D2	1N4007	
D3	1N4007	
D4	1N4007	
D5	-	
D6	-	
D7	16V	0.5W Zener
D8	-	
D9	-	
D10	16V	0.5W Zener

PCB5

Part	Value	Note
R1	4.7k	
R2	-	
R3	-	
R4	100k	1W
R5	33k	
R6	-	
R7	-	
R8	-	
R9	-	
R10	-	
R11	-	
R12	-	
R13	-	
R14	-	
R15	-	
R16	-	
R17	-	
R18	-	
R19	-	
HUM	470R	trimpot

Part	Value	Note
C1	10n	2kV
C2	47u	400V
C3	-	
C4	10u	100V
C5	-	
C6	-	
C7	-	

D1	1N4007	
D2	1N4007	
D3	-	
D4	-	
D5	-	
D6	-	
D7	-	
D8	-	
D9	LED	

F1	-	
F2	500mA	20mm glass
F3	500mA	20mm glass