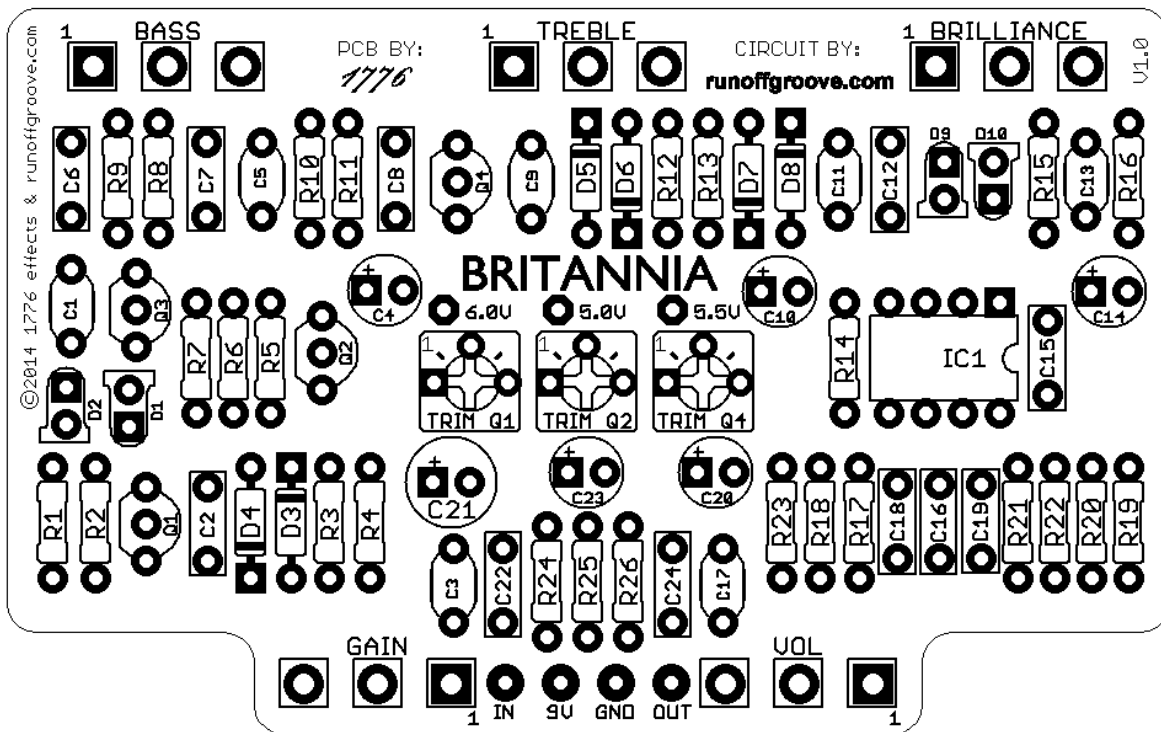


BRITANNIA

Circuit by: runoffgroove.com PCB by: 1776 effects



RUNOFFGROOVE'S CIRCUIT DESCRIPTION:

“Britannia is a distortion circuit inspired by the overdrive tones of the Vox AC-30 Top Boost amplifier. The gain structure, tone shaping, and clipping were all carefully chosen for the best possible approximation of the target sound. Cascaded gain stages and diode pairs contribute the rich overdrive and an active filter network provides the vibrant frequency response praised by classic amp aficionados. The team at runoffgroove.com considers Britannia our finest work thus far and feel that you will enjoy the circuit just as much.”

Check out www.runoffgroove.com for a more detailed circuit analysis and for other fantastic projects!

BRITANNIA PARTS LIST

Resistors		Capacitors		Diodes	
R1	1M	C1	150pF	D1	3mm LED (red)
R2	33k	C2	2n2	D2	3mm LED (red)
R3	390R	C3	470pF	D3	1N4148
R4	100k	C4	10uF	D4	1N4148
R5	18k	C5	470pF	D5	1N4148
R6	82k	C6	220n	D6	1N4148
R7	4k7	C7	220n	D7	1N4148
R8	10k	C8	100n	D8	1N4148
R9	1k	C9	47pF	D9	3mm LED (red)
R10	47k	C10	1uF	D10	3mm LED (red)
R11	100k	C11	680pF	Potentiometers	
R12	1k	C12	4n7	Bass	50kA
R13	10k	C13	470pF	Treble	100kA
R14	1M	C14	4u7	Brilliance	100kC
R15	10k	C15	220n	Volume	10kA
R16	1k	C16	1n	Gain	100kA
R17	4k7	C17	330pF	Trim Pots	
R18	6k8	C18	22n	Trim Q1	5k
R19	47k	C19	100n	Trim Q2	50k
R20	47k	C20	1uF	Trim Q4	50k
R21	39k	C21	220uF	IC	
R22	8k2	C22	100n	IC1	TL072
R23	100R	C23	10uF	Transistors	
R24	68R	C24	100n	Q1	2N5457
R25	10k			Q2	J201
R26	10k			Q3	2N5088
				Q4	J201

PARTS NOTES:

- Capacitors
 - pF's - ceramic or multilayer ceramic, pads are at 5mm spacing
 - nF's - film, 5mm spacing
 - uF's - electrolytic, cap size 5mm x 11mm for all values except 220uF (6.3mm x 11mm)
- All resistors are standard 1/4 watt
- Potentiometers spacing set for Alpha Single-Gang 16mm Right-angle PC Mount, but solder lugs can be used
- Trim Pots should be Bourns (Cermet) 3362P or equivalent
- Enclosure size - This is designed to fit in a 1590BB
- Mouser Shared Project <http://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=58de78de28>
 - Project cart contains everything but potentiometers, J201's, and 2N5457 for the PCB.
 - Normal stompbox items also not included in the BOM (3PDT, jacks, enclosure).

BIASING:

Please note, that the following transistors must be biased. The fab pcb has test pads and the voltage listed. For the etched version the voltages are as follows:

Q1 (2N5457) = 6.0V

Q2 (J201) = 5.0V

Q4 (J201) = 5.5V

All voltages are measured at the JFET's drain. Check the datasheets for the pinout.

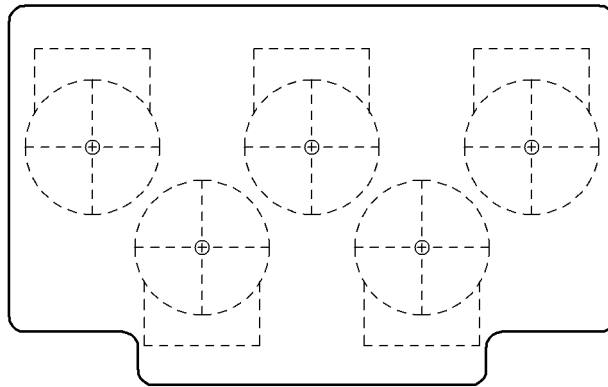
http://www.onsemi.com/pub_link/Collateral/2N5457-D.PDF

<http://www.fairchildsemi.com/ds/MM/MMBFJ201.pdf>

DRILL GUIDE

Print at 100% scale for drilling! Dry fit the PCB template inside to make sure you have clearance and then place the template on top of the enclosure to center-punch the hole locations.

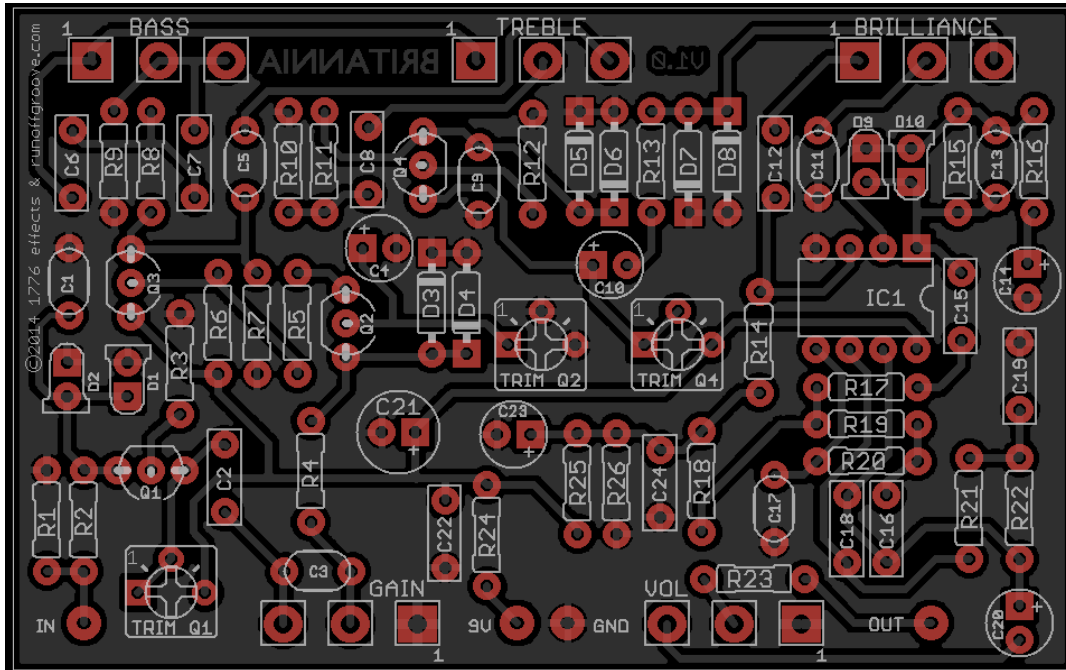
The drill guide is the same for the etched version.



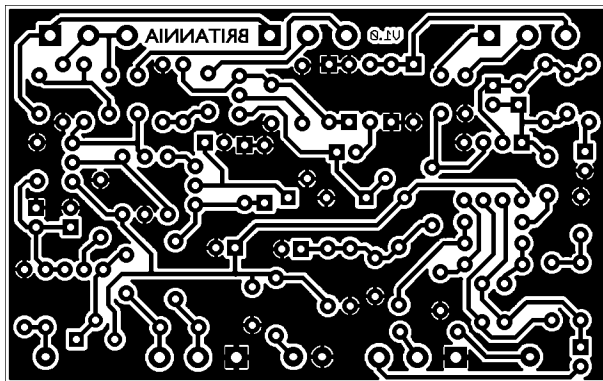
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ETCH LAYOUT & TRANSFER:



Component numbering & values are the same as the fab PCB.



80mm x 50mm (3.15" x 1.96")

PRINT AT 100% SCALE!