THOR V1.2

Runoffgroove's Thor with added modifications

OVERVIEW

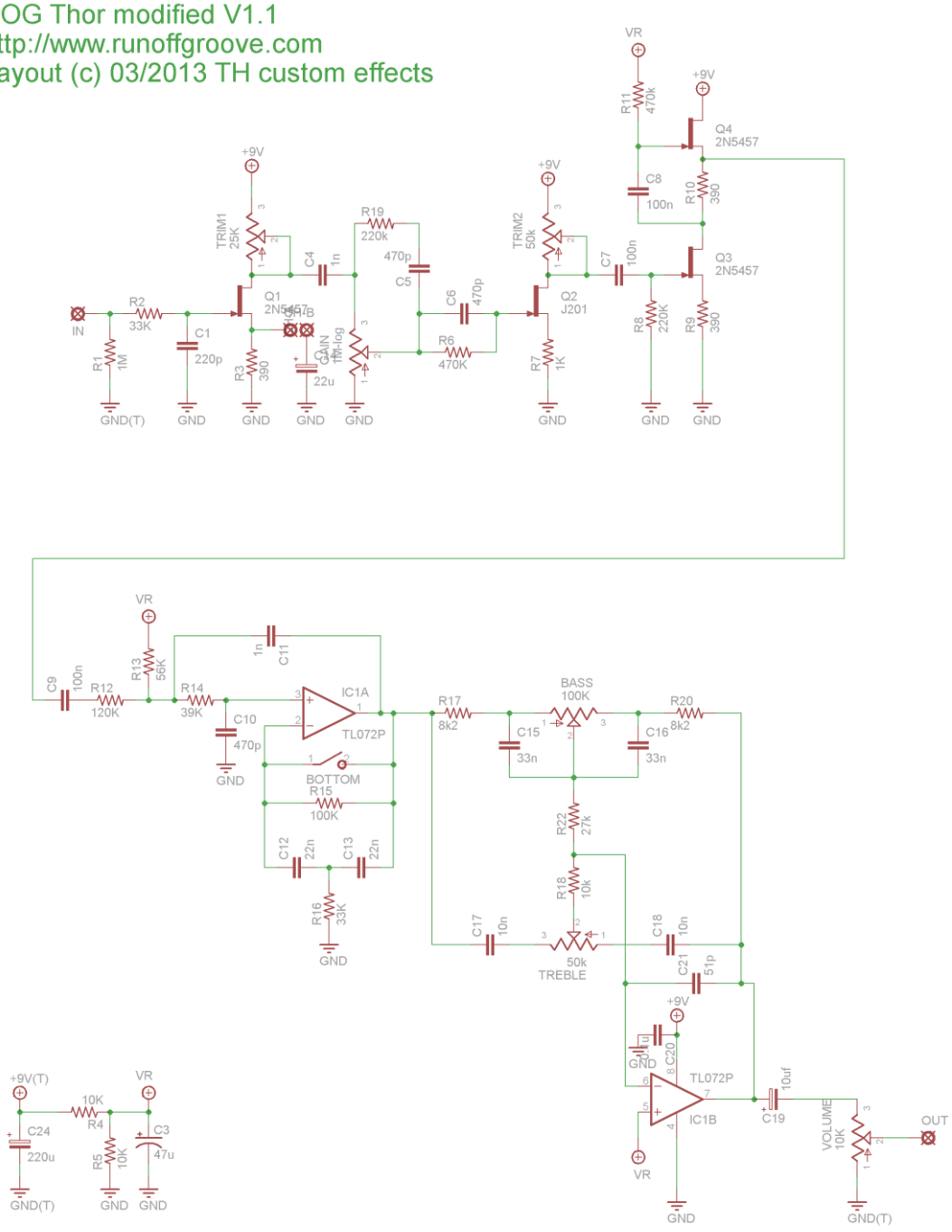
All credit for the main circuit goes to http://runoffgroove.com. You will also find a lot of sound samples and documentation on their website.

GENERAL

This is my attempt on an easy-to-use PCB for this great circuit. This is intended to work as a Marshall 100W super lead amp.
I have adjusted this to my taste by adding a Bandaxall tonestack as well s some modifications like a lead-channel-switch and a modification to implement a better bright-switch (by removing it ☺).

SCHEMATIC

ROG Thor modified V1.1
http://www.runoffgroove.com
Layout (c) 03/2013 TH custom effects



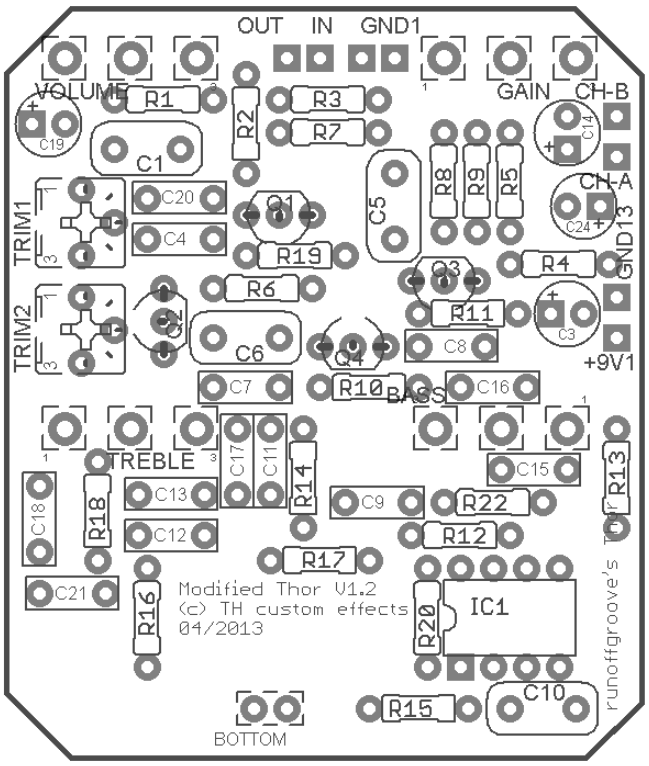
BILL OF MATERIALS

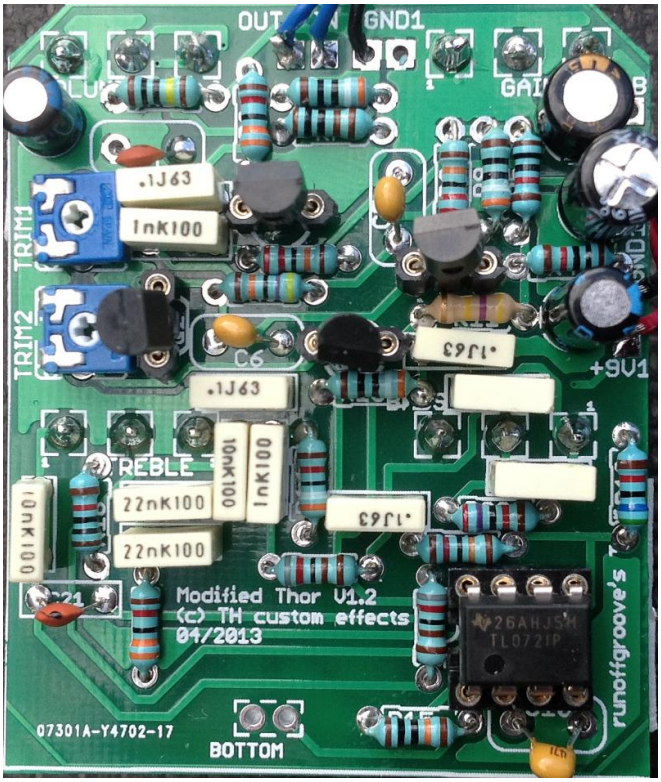
	Device#	*Qty*	*Value*	*Comment*
Resistors	R1	1	1M	
	R2,R16	2	33k	
	R3,R9,R10	3	390R	
	R4,R5,R18	3	10k	
	R6,R11	2	470k	
	R7	1	1k	
	R8,R19	2	220k	
	R12	1	120k	
	R13	1	56k	
	R14	1	39k	
	R15	1	100k	
	R17,R20	2	8k2	
	R22	1	27k	
Capacitors	C1	1	220p	ceram
	C3	1	47u	polarized electro
	C4,C11	2	1n	film
	C5,C6,C10	3	470p	ceram
	C7,C8,C9,C20	4	100n	film
	C12,C13	2	22n	film
	C14	1	22u	polarized electro
	C15,C16	2	33n	film
	C17,C18	2	10n	film
	C19	1	10u	polarized electro
	C21	1	51p	ceram (can also be 47p)
	C24	1	220u	polarized electro
Transistors	Q1,Q3,Q4	3	2N5457	
	Q2	1	J201	
Trimmer	TRIM1	1	25k	6mm
	TRIM2	1	50k	6mm
Pots	GAIN	1	1M-log	16mm right-angle print
	BASS	1	100k-lin	16mm right-angle print
	TREBLE	1	50k-lin	16mm right-angle print
	VOLUME	1	10k-log	16mm right-angle print
ICs	IC1	1	TL072	Always use the –IP version for lower noise!
Other	SW1,2	2	SPST	

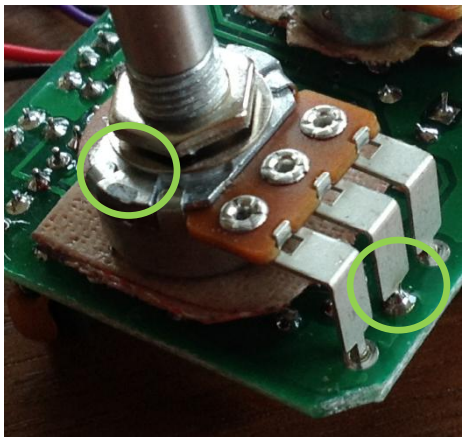
The total number of capacitors is 21 despite the different numbering in the schematic. There are also only 21 resistors.

BUILDING

Start populating the resistors first. You want to socket the transistors. Put the sockets in next. Then go the trimmpots. Last are ceramic and box film capacitors, then the electrolytic.







The board mounted pots need to go onto the other side of the board. Use some (double-sided) tape to make sure the pot cases do not shorten any pins that come through the board. As you solder them it is good practice to apply some solder to the middle pin first, then pull it back approx. 1mm and let it harden. Then solder the other pins. This will align the pot horizontally in a better way and avoid shortcuts of the wide pot pins and the board.

Don’t forget to clip of the small bracket before you mount the circuit.

BIASING:

As there are only two transistors you will be able to adjust this by ear. If you have never done it before please use a multimeter and check that the transistor drain voltage is close to 6V for the 2N5457 (Q1) and 5V for the J201 (Q2). At least this should put them into their working area. You can fine-tune the transistors once you have powered the circuit up by ear.

FINALLY

This is a real Marshall-sounding circuit. I think the mods done are giving this a much wider range of tones than before.

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