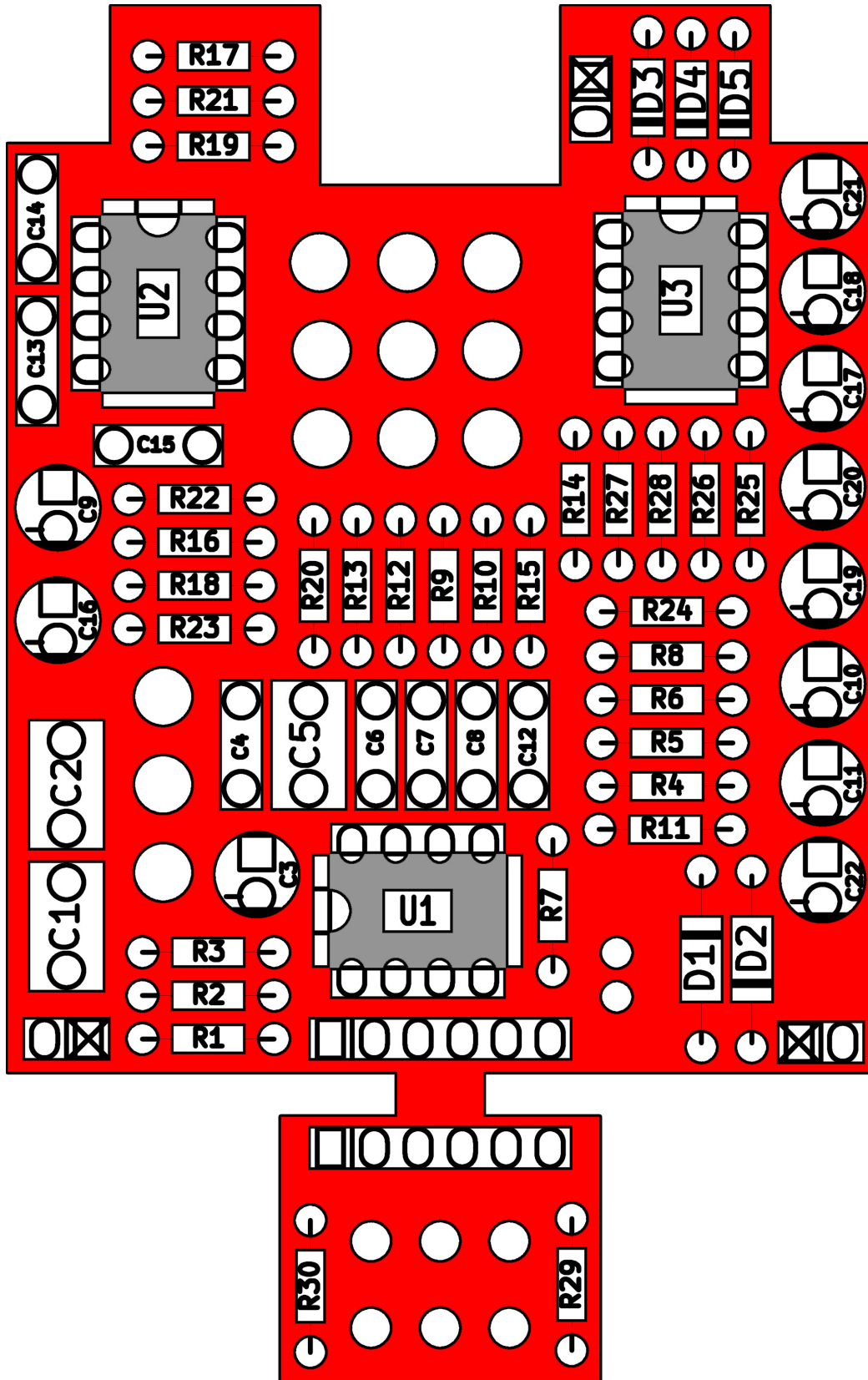


# GRIND CUSTOMS FX

[WWW.GRINDCUSTOMSFX.COM](http://WWW.GRINDCUSTOMSFX.COM)

## TUSK



# GRIND CUSTOMS FX

[WWW.GRINDCUSTOMSFX.COM](http://WWW.GRINDCUSTOMSFX.COM)

R1	10K	C1	100N	U1	TL072
R2	1M	C2	100N	U2	TL072
R3	100K	C3	4.7U	U3	ICL7660/
R4	560R	C4	68N		TC1044SCPA
R5	5K1	C5	390N	D1	UNICORN
R6	1K5	C6	68N	D2	TEARS
R7	1K	C7	82N	D3	1N4742
R8	10K	C8	390P	D4	1N4001
R9	2K	C9	1U	D5	1N4001
R10	15K	C10	1U TANT	D6	
R11	422K	C11	1U	VOLUME	B10K
R12	1K	C12	2.2N	TREBLE	B10K
R13	1K5	C13	27N	GAIN	B100K*
R14	15K	C14	820P		*DUALGANG
R15	47K	C15	3.9N		
R16	22K	C16	4.7U		
R17	27K	C17	47U	STOMP	DPDT
R18	12K	C18	1U		LATCHING
R19	392K	C19	1U		
R20	1K8	C20	1U		
R21	100K	C21	1U		
R22	100K	C22	47U		
R23	4K7				
R24	560R				
R25	27K				
R26	27K				
R27	3K9				
R28	100K				
R29	68K				
R30	68K				

# GRIND CUSTOMS FX

[WWW.GRINDCUSTOMSFX.COM](http://WWW.GRINDCUSTOMSFX.COM)

## HISTORY

Let's get this out of the way. It's a Klone (a clone of a Klone). There, I said it. Now in this doc I (Juan) may say some things that could be considered controversial in Klone lore. I'd like to think I've made enough of the damn things to have something to say about them. So be prepared to hear some stuff that you might not like.

Oh yeah, this was Rej's and my idea of the perfect Klone layout (fits in a 1590B and is properly laid out for easy buildage). PCB wrangler for this one was Curt.

## CONTROVERSIAL STATEMENT 1:

You don't have to be super accurate when it comes to some of the weirder parts values.

This circuit was traced by the legend of degoopery that is Martin Chitum. Indeed this build is based on that original trace. Some of the values on that trace were taken verbatim and are super accurate. Which resistors aren't.

So substituting R19 392K for a 390K, R11 422k for a 430k & R27 3k9 for a 3k3 is perfectly acceptable in my book (and indeed within tolerance). R27 particularly is current limiting resistor for the LED so really doesn't need to be super accurate!

## CONTROVERSIAL STATEMENT 2:

Don't get hung up on the Unicorn Tears (D1&D2).

There I said it. They're 'essential' apparently. However most germanium diodes with a forward voltage of around 260-290mV will sound about right. ie, indistinguishable from any other similar Ge diode with a similar forward voltage. We tend to use 1N34A from Tayda and they tend to sit in that sort of range.

## CONTROVERSIAL STATEMENT 3:

Not all Klons are the same.

The biggest most noticeable difference doesn't come from the Unicorn Tears, it tends to come from variations around the tone pot. Now the BOM above is accurate to the Chitum trace. However when we back-to-backed ours with a friend's gold Klone, we found it a little lacking in the mids dept. Replacing C15's with an 8n2 made ours indistinguishable from his.

It doesn't end there however, as a second Klone was traced and found to have all sorts of oddness going on in it. The main difference on this one was that it still had C15 as a 3n9, but the two resistors on the tone pot were swapped around. So R20 becomes a 4K7 and R23 a 1K8. This also restores some of those mids and, in my opinion, makes the tone pot work more pleasingly.

There appears to be no right answer to this one. So go with the one you like most.

# GRIND CUSTOMS FX

[WWW.GRINDCUSTOMSFX.COM](http://WWW.GRINDCUSTOMSFX.COM)

## FINAL WORD

Due to the tolerances of analogue electronics, no pedal will sound exactly like another, even made by the same manufacturer. So when people complain that it's not exactly like their particular Klon or KTR or whatever, it very well might not be. Nor might their Klon be like another Klon. There's a HUGE amount of bullshit, hype, legend, whatever you want to call it, surrounding this pedal, and that's very much all it is.

It's just an OD. It's a very good OD, but please, it's just an OD.

## BUILDAGE

Moving on from the nonsense. The stomp wants to be a PCB mount DPDT latching switch. The Alpha ones work wonderfully for this and are very robust. Part numbers: 107-SF12011-L DPDT or 107-SF12020-L DPDT.

As this wasn't really meant as a DIY board, it's missing some labels. The X pads on the layout are the grounds for the In/Out/9v pads. An easy way to get them the right way around is that the square pads are always ground.

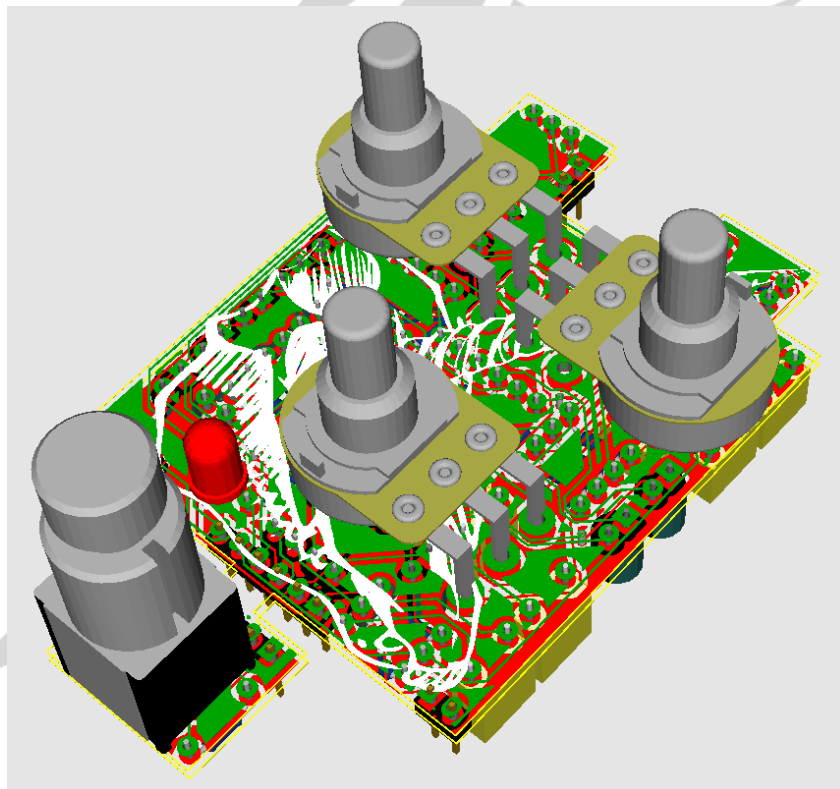
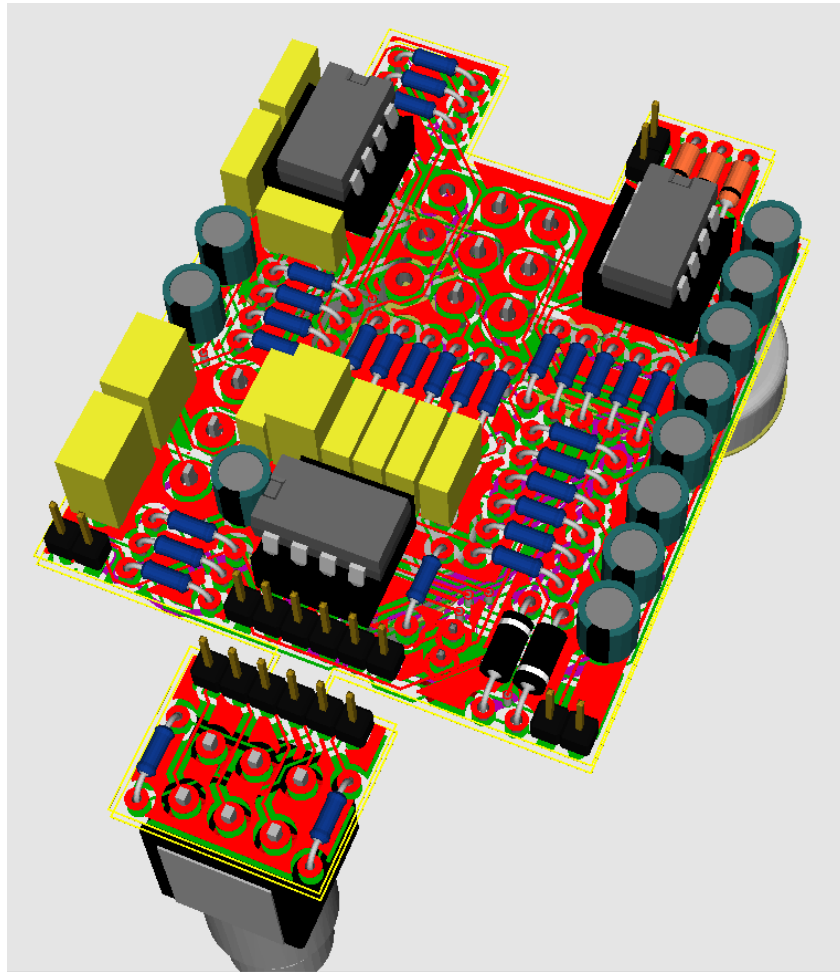
The polarity of the LED also isn't marked. The positive (long) leg goes to the bottom of the board.

Viewed from the component side of the board, the top two columns of pot pads are for the dual gang gain pot. The 3<sup>rd</sup> column is for the volume. The lower pot pads are for treble/tone.

Finally don't put any more than 9vDC into it. Things will pop if you do.

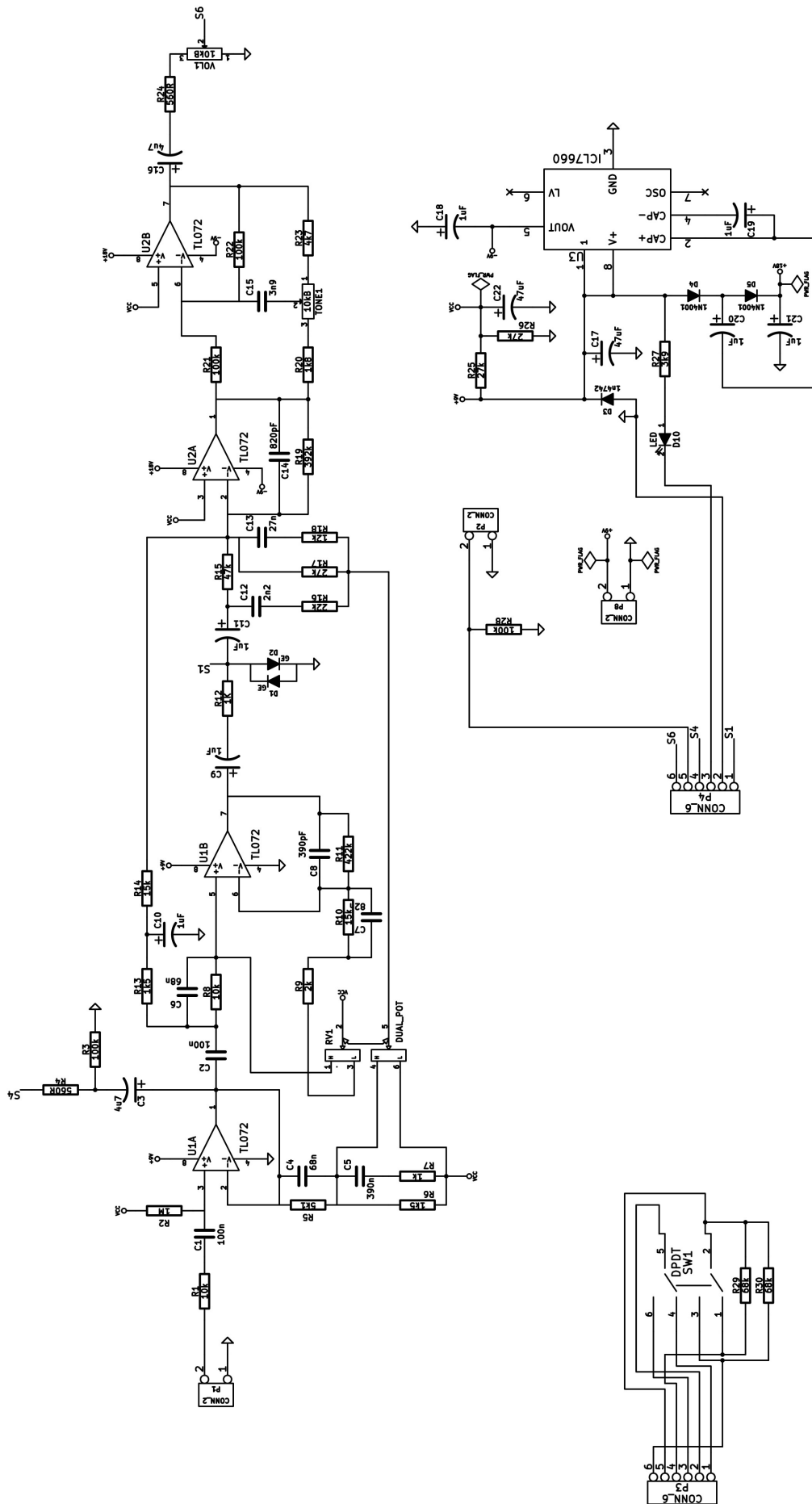
# GRIND CUSTOMS FX

[WWW.GRINDCUSTOMSFX.COM](http://WWW.GRINDCUSTOMSFX.COM)



# GRIND CUSTOMS FX

[WWW.GRINDCUSTOMSFX.COM](http://WWW.GRINDCUSTOMSFX.COM)



# GRIND CUSTOMS FX

[WWW.GRINDCUSTOMSFX.COM](http://WWW.GRINDCUSTOMSFX.COM)

