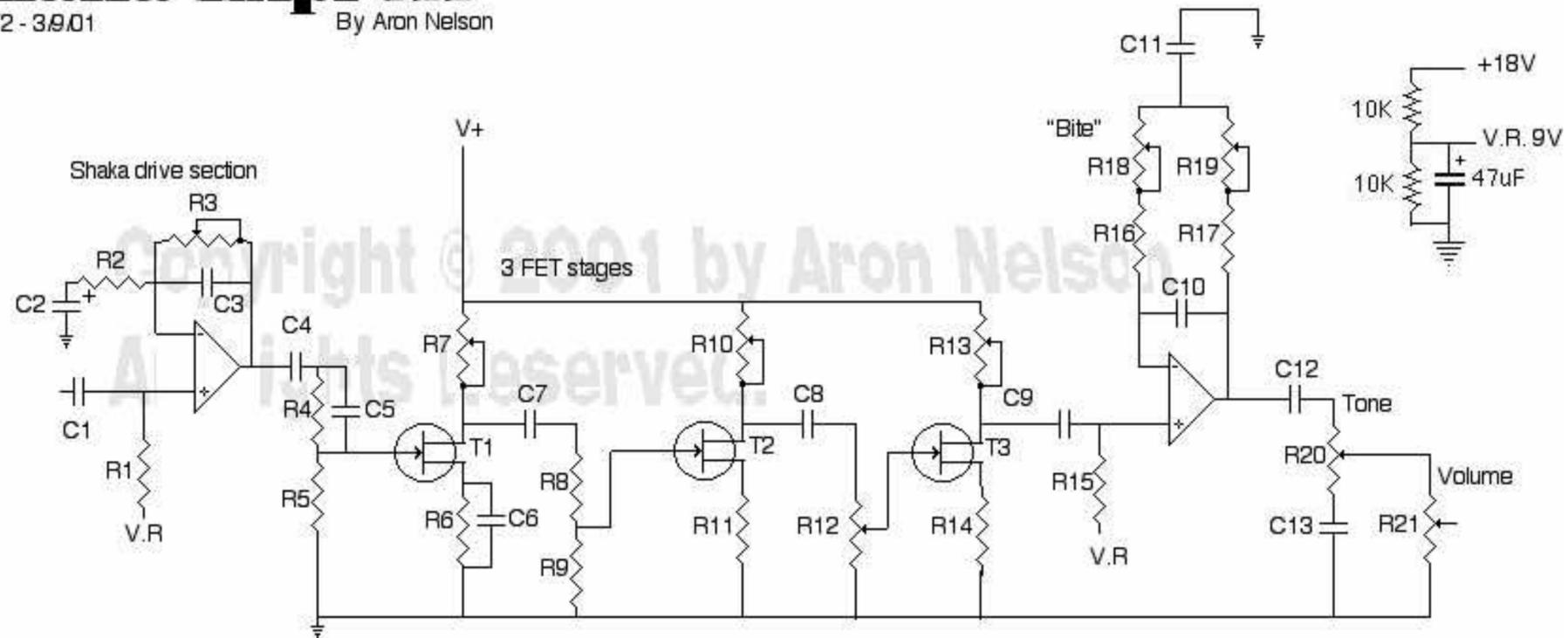


Shaka Express

REV2 - 3/9/01

By Aron Nelson



C1 = .01uF
C2 = .47uF
C3 = 220pF
C4 = .1uF
C5 = 470pF
C6 = 22uF
C7 = .1uF
C8 = .1uF
C9 = .1uF
C10 = .022uF
C11 = .068uF
C12 = .01uF
C13 = .01uF

R1 = 470K
R2 = 1K
R3 = 100K
R4 = 470K
R5 = 470K
R6 = 1K
R7 = 100K*
R8 = 470K
R9 = 470K
R10 = 100K*
R11 = 1K
R12 = 500K Trim pot

R13 = 100K*
R14 = 1K
R15 = 220K
R16 = 1.5K
R17 = 1.5K
R18 = 25K (1/2 dual pot)
R19 = 25K (1/2 dual pot)
R20 = 100K
R21 = 100K

V+ is 18 volts (2 batteries or Voltage Doubler Circuit).
R18 and R19 are a single dual pot.
V.R. is 1/2 V+ (i.e. 9 volts)
Op Amp is TI RC4558
FETs are J201

Notes:

R12 should be adjusted so the level is very low going to T3, then turn up the trim to taste. T3 should not clip very much - a delicate balance.
*R7, R10 and R13 are 100K trim pots. Starting voltages: 15V, 9.5V, 5.4V

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Special Thanks to Jack Orman for his work with FETs and effects circuits

About the Shaka Express:

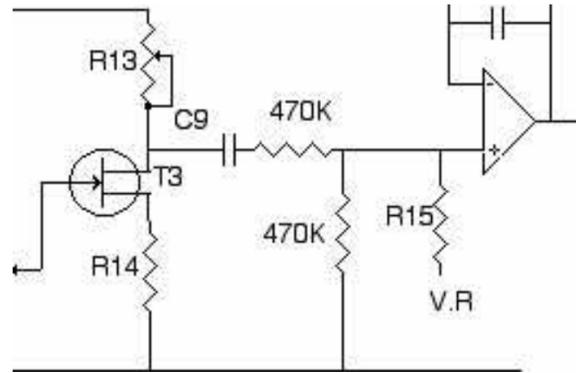
The Shaka Express is a medium to very high gain overdrive pedal. The op amp section resembles the original Shaka Braddah, minus the clipping diodes. In fact, one of the versions of the Shaka Express had LEDs as clipping diodes in the feedback loop of the op amp. There are 3 FET stages that allow you to get lots of gain. The mid notch circuit is subtle but does enhance the tone of the circuit. As of this schematic date, this is my favorite high-gain distortion pedal. It sounds very good when recorded direct using the Marshall speaker simulator. A touch of reverb and delay and it's a great sound. Tons of harmonics, sustain, and grind are in this pedal. This pedal is not for low gain sounds - it's heavy overdrive/distortion all the way!

Suggested Mods:

The Shaka Express is the first Shaka pedal to go through a testing process before being released. Here are some of the mods suggested:

Ed Rembold:

To utilize T3 to the fullest - put a 470K/470K resistor after C9 from signal to ground and use the junction of the 2 resistors to the input of the tone stage. Ed used a 100K dual pot for the "bite" control. You can also try a 50K dual pot as well. Note: In my version, I didn't clip T3 as much, the trimmer before T3 was set so the level was fairly low going into T3. Ed's recommendation is a good one and allows you to control T3's distortion a lot more.



I recommend shielded wire for the input and output of this pedal. Ground the shield only on one end of the cable.

Another tip: As Rob Strand pointed out, you could make a mod that would switch the 3rd gain stage in and out, making the pedal a lot more versatile for lower gain sounds. I've done it and it works very well.

Layout/PCB

Coming soon...

<http://hail-eris.com/~stompbox/pedals/> <http://surf.to/stompbox>