



CIRCUIT DESCRIPTION

The Input couples over pull-down resistor R8 through C8 to the base of Q1. Q1, Q2, Q3, and Q4 comprise a FET-Minibooster input, silicon BJT output, discrete op amp. The op amp is biased through R11 to the gate of Q1 via the 10k "BIAS" trim pot. C10, C11, and D3 serve to de-couple the DC voltage source and protect the circuit. The base of Q1 is the positive input of the op amp, the base of Q3 is the negative input and the collector of Q4 is the output. As R1 is shared by both Q1 and Q3, Q2 (and its biasing components R9, R10 and C9) serves to set the current for both Q1 and Q3. C1, C2, R3 and the 1 Meg "Gain" pot are in the feedback path of the op amp and serve the same duty that they do in IC op amp configurations. C12 serves to stabilize the op amp at higher frequencies. The output of the op amp couples through C3 to a pair of diode-to-ground clippers, comprised of a FET diode in series with a Germanium diode. The diode clippers are directly coupled to a standard Minibooster comprised of Q7, Q8, R4, R5, R6, R7, C4, and C5. The output of the Minibooster is coupled through C6 to a simple low-pass tone control consisting of a 50k "TONE" pot in series with the signal, and C7, a cap to ground. The output of the tone control is taken at the juncture of the pot and the capacitor and is directly coupled to the 500k "LEVEL" pot set up as a variable voltage divider.

NOTES

8-2-2001: Used at stage volume at a jam and this thing rips! Plenty of drive available, for me at least. It has a sharp and crisp attack with a rich decay, plenty of bass without sounding muddy and plenty of bite. The only complaint I have at this point is with the Tone control, a little too simple and a bit too ineffective, the difference between extremes is subtle, but does offer interesting changes, nothing unusable, just limited. This bastard is LOUD. The discrete op amp was biased with $\frac{1}{2}V+$ at the collector of Q4. Power consumption was measured at 2ma at rest, dropping slightly with strong chords.
Things to try: New tone control; Germanium output transistor on op amp; higher value R1; MOSFET clippers.

MORE TO COME!!!