

Supa Nova

The Supa Nova is a very low to pretty high gain, tube-ish, distortion pedal that relies on a MOSFET (BS170) to overdrive two JFETs (J201). The tone controls are designed to provide adjustment to the middle and upper frequencies. Voltage at the drains of Q2 and Q3 should be about 5.4 and 4.7, respectively, but make sure to tune by ear. Q4 can be a 2N5088 bipolar transistor or a JFET. The layout is meant to accommodate either. The JFET is smoother and mellower than the 2N5088, while the 2N5088 (my favorite) is clearer and has a bit more edge and attack. Silver-mica capacitors are recommended for the pF values, as these sound less smeared in this circuit than ceramic. All capacitors are in uF unless otherwise noted. Consider excluding D1 if a battery is your primary power source. You might notice that it sounds better this way. If you like to live dangerously, see if you can hear a slight increase in highs by removing D2.

Modifications: For less bass reduce C4, for more increase C13. Increase R16 for more *switchable* bass. For more gain, increase R12 to 560K or 1.5M. A switch for this might make a good boost switch. The values for C8 and R15 should be tweaked according to your setup. 15-18K should be about right for R15; 10uF for C8. Increase both if you find that bass is more than slightly reduced when the effect is in and drive is low. However, C8 and R15 should be low enough so that engaging the bass switch in fact causes a noticeable increase. This stompbox was designed with strat single coils. If you are a **humbucker user** or have fat pickups, try 2.2uF for C2, (while possibly lowering R15 to 12-15K). These changes ensure proper functioning of the tone control. If you often shift between single coils and humbuckers, use a DPDT switch to toggle between the two modes.

If you use the SC/HB switch, do not bother with the notch switch discussed below.

A deeper midrange notch results from increasing R15. A lower value sounds thicker, while the higher value sounds more relaxed. A notch switch modification based on this resistor has been incorporated into the PCB layout. For starters, make R15 15-18K, with a 3.9K resistor for R15b.

You could also replace the Notch or Bass switch with an upper mid-boost switch. From Q3 source run a 1.2K R into a .047 (try up to .1) cap to ground. The resistor-capacitor order is important. This works well, but also adds noise.

PCB Instructions: Print without "fit to page" option. The PCB is designed so that Q4 is a 2N5088. To use a JFET you must turn it around and bend the leads accordingly. Remember to re-bias Q3's drain if you switch between different transistors for Q4. The Notch modification is built into the PCB layout. To ignore, just use a jumper across R15b. Parts for the mid boost switch are off board. Use snapable sockets for all transistors. Also, use sockets for C2, C4, C8, C13, R15, and perhaps C12.

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