Rocket Fuzz

Input Jack

DPDT Stomp Switch

Output Jack

Drive
50K
Back View

Tone
10K
Back View

Volume
10K
Back View

Black   Red

0.1uF C1
470K
0.01uF C2
0.01uF*
10K C3
0.1uF C4
1.2K
10K
0.1uF C6
0.1uF C7

C
B
E
C8
47uF
C
B
E
3-TR-FF
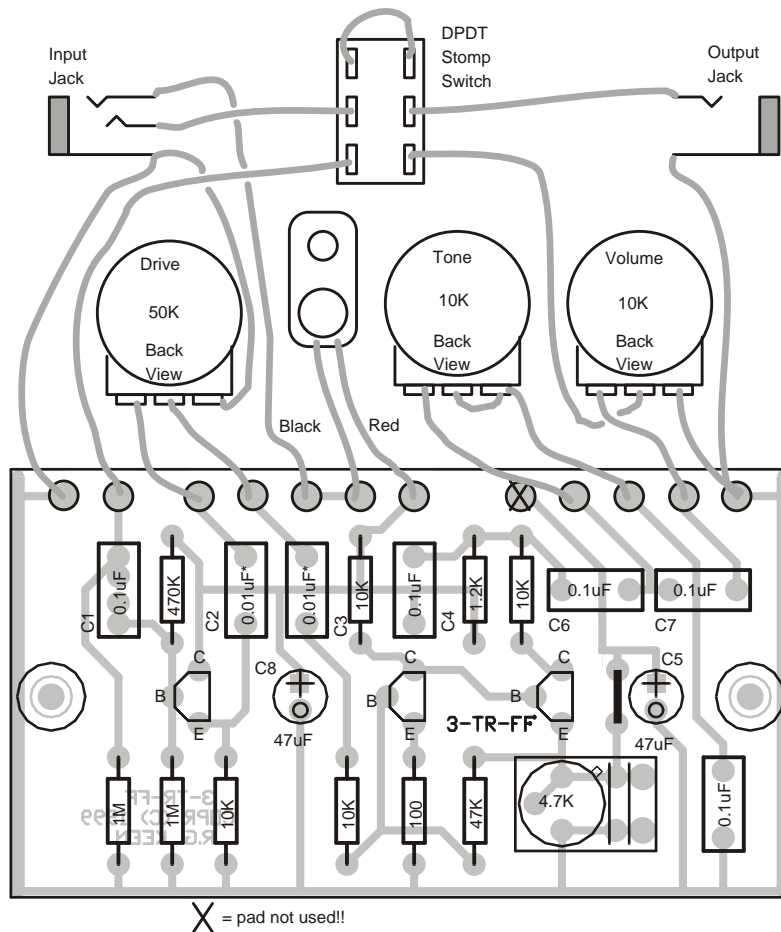C
B
E
C5
47uF

1M
1M
10K
10K
100
47K
4.7K
0.1uF

X = pad not used!!

The Rocket is a screaming cool Fuzz Face variant based on Gus Smalley's 3 Transistor Fuzz. If you want, you can omit the drive pot because this thing is built for screaming and the drive pot might just as well be left on "10".

Smooth, great sustain and rich fuzz make this pedal stand out from the others. The addition of the tone control gives this pedal extra versatility. If you use sockets for C1, C2, C4, you can really tune this pedal's tone in.

I like this pedal more than my Big Muff and Color Sound Tone Bender. I think it's that good.

One would think to immediately dismiss this pedal because of its bipolar silicon transistor nature, but that would be a mistake. The sound coming out of this pedal is not harsh, it's smooth and rich.

Notes:

-C1, C2, and C4 were socketed in my pedal for ease in tuning.

-All transistors are 2N5088 in my pedall. Gain is about 450 for all three transistors.

-Once you get it assembled, play power chords and adjust the 4.7K trimmer pot on the board until the sound is "optimized" and the sound snaps into focus.

-For a thinner sound, adjust C2. Smaller values make the pedal brighter. C4 is a high end rolloff cap. Larger values roll off more highs.

-The 4.7K bias pot is a trimmer pot I bought at Radio Shack (There are additional holes there to support other sizes of trimmers - R.G..).

Aron Nelson

R.G.'s Notes:
I like boards that can do more than one thing. The Rocket board is set up so it can do either the Rocket or a standard Fuzz Face, or a number of variations.   The single jumper is there for the pure Rocket variation, as the Rocket uses the Drive pot to control distortion, unlike the Fuzz Face that used a pot on the emitter of the same transistor for distortion variation. Like other Fuzz Face variants, this pedal lends itself to the use of either the Millenium 1 or Millenium 2 Bypasses to give you both true bypass and an indicator LED with only the DPDT stomp switch shown. See http://www.geofex.com for more information on the Millenium Bypasses.

Rocket Fuzz - Parts and Pieces

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Parts List
Qty  Description                        Supplier         Part number         Price Each
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1  - 100 ohm, 1/4W resistor             Mouser           29SJ250-100           0.07
1  - 1.2K ohm, 1/4W resistor            Mouser           29SJ250-1.2K          0.07
4  - 10K ohm, 1/4W resistor             Mouser           29SJ250-10K           0.07
1  - 47K ohm, 1/4W resistor             Mouser           29SJ250-47K           0.07
1  - 470K ohm, 1    /4W resistor         Mouser            29SJ250-470K           0.07
1  - 1M ohm, 1/4W resistor              Mouser           29SJ250-1M            0.07
2  - 47uF/16V electro cap               Mouser           140-XRL16V47          0.07
4  - 0.1uF film capacitor               Mouser           140-PF1H104K          0.24
3  - Tuning capacitors - see text       Mouser           140-PF1H104K          0.24
1  - 4.7K trimmer potentiometer         Mouser           323-409H-5K           0.61
3  - 2N5088 transistor or Equivalent    Mo        user           610-2N5088          0.26
1  - 50K linear pot, 16mm               Mouser           313-1000-50K          1.24
1  - 10K linear pot, 16mm               Mouser           313-1000-10K          1.24
1  - 10K audio pot, 16mm                Mouser           313-4000-10K          1.74
1  - stereo 1/4" jack (input)           Mouser           502-112B              1.96
1  - mono 1/4" jack (output)            Mouser           501-111               1.88
1  - battery clip                       Mouser           12BC126                           0.39
1  - Box - I prefer Hammond 1590BB      Mouser           546-1590BB           10.40
3  - knobs
1  - Stomp switch                       Where you find them!    $2.50 to $16.00
Miscellaneous hookup wire, solder, etc.
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Building it:

Start 0.1uF in the positions noted for tuning the response of the circuit, then follow Aron's advice to tune it to your taste.

In building the board, first figure out how you will mount the board in your box, and either mark and drill holes if you prefer the screw-down standoffs (uugh! shudder!!) or place the adhesive standoffs or velcro :-) with the bare board - it's much easier to do the mechanical work before you populate the board. See http://www.geofex.com in the tips and tricks section to see a   sketch of how this board would fit in a Hammond 1590BB.

Once the holes are cut and the box is laid out, start populating the board. For easiest assembly, work from the lowest to the highest components. First solder in resistors.

If you make many effects boards, it's handy to get the Mouser 5166-801 lead bender, ($2.94) as this will let you quickly and accurately bend resistor leads so they just drop in the holes on the board. All GEO boards mount the resistors in exactly the same way. You can also   whack a bit of wood or plexiglass or other plastic into a handy lead bender. This saves a lot of time.

Once the resistors are in, put in the transistors, and finally the capacitors. Work slowly and make sure your solder joints are good. The Rocket board has been designed to make solder bridges less likely, but good soldering will pay off handsomely when you start debugging, as nothing will make up for cold, poorly made solder joints.

Once the board is populated and you are happy with the way it loo   ks, solder in the hookup wire leads. I find it helpful to cut the lead wires approximately to length, strip both ends and then solder them all into the circuit board before trying to solder them to the controls and switches. I have a "secret weapon" for wiring up effects - I drilled 3/8" and 1/2" holes in a block of 2"x8" lumber scrap. This lets me stick the pots, jacks and switches outer ends into the holes and leave their lugs exposed so I can lay the board in the middle and just solder the wir   es, then put the whole thing into the box at once - no burned fingers and/or wires trying to solder wires while the board is in the box.

Happy Building!!

R.G.