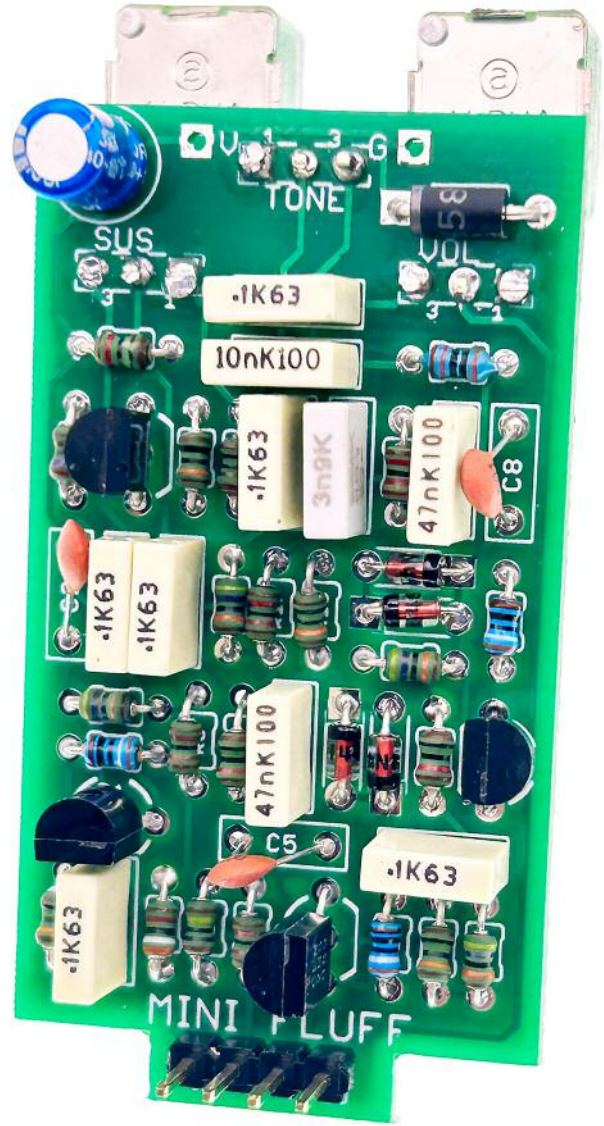


# Fuzz Pup



## Big Muff Pi

The daddy of all fuzz  
in a baby box



# IMPORTANT

## Before you start...

Grab the general build doc that covers all FuzzPup V2 builds.  
Most of the information you need for this build is in there.

Read it? OK, carry on.

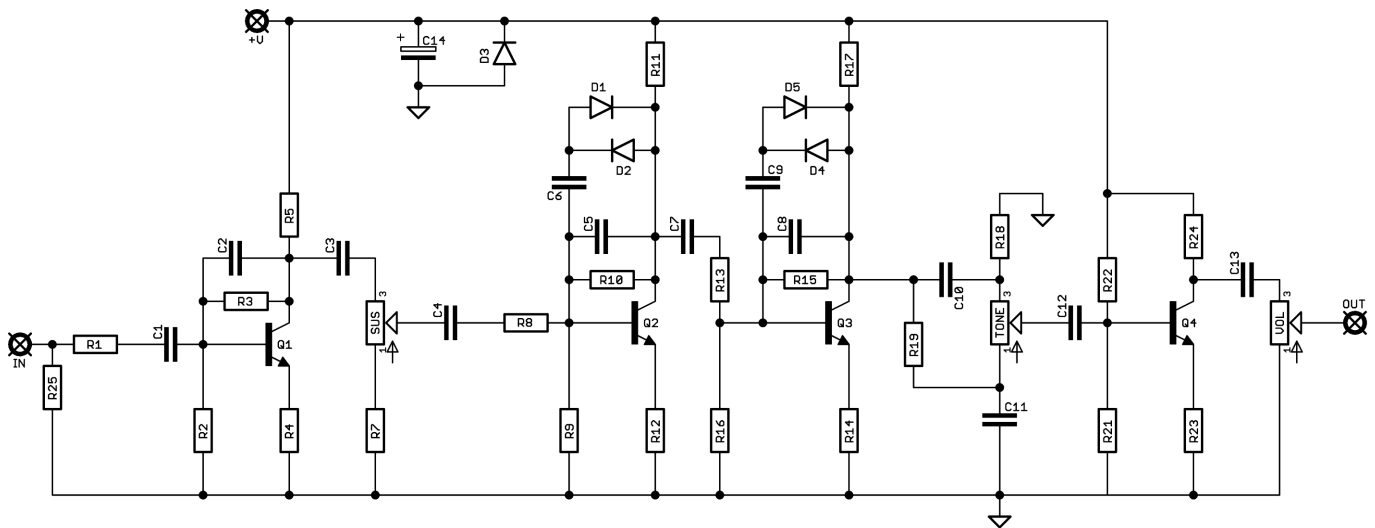


## FuzzPups v2

Lovely little boxes of joy with a  
standardised build pattern

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# Schematic



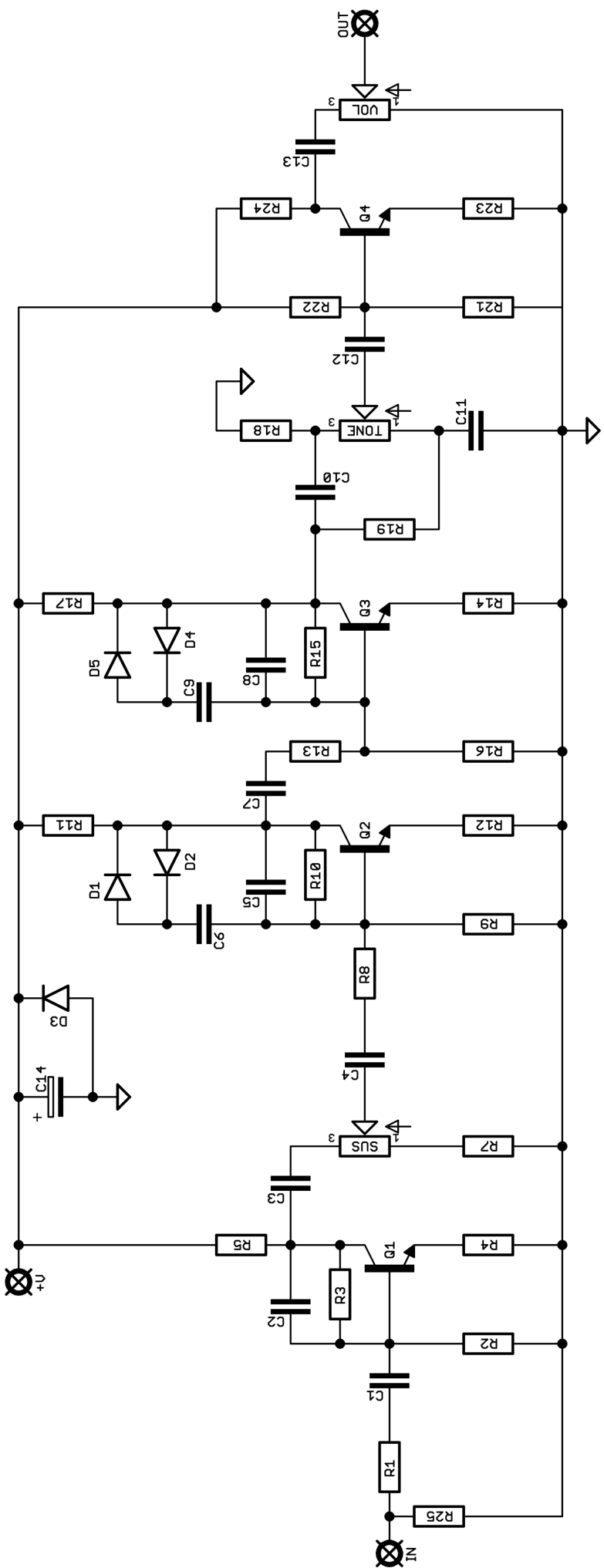
The PCB is designed to take 1/8W (0.125W) resistors. You can use 1/4W if you wish, but you'll have to position them upright. Make sure they're bent enough that you'll have plenty of clearance in your enclosure.

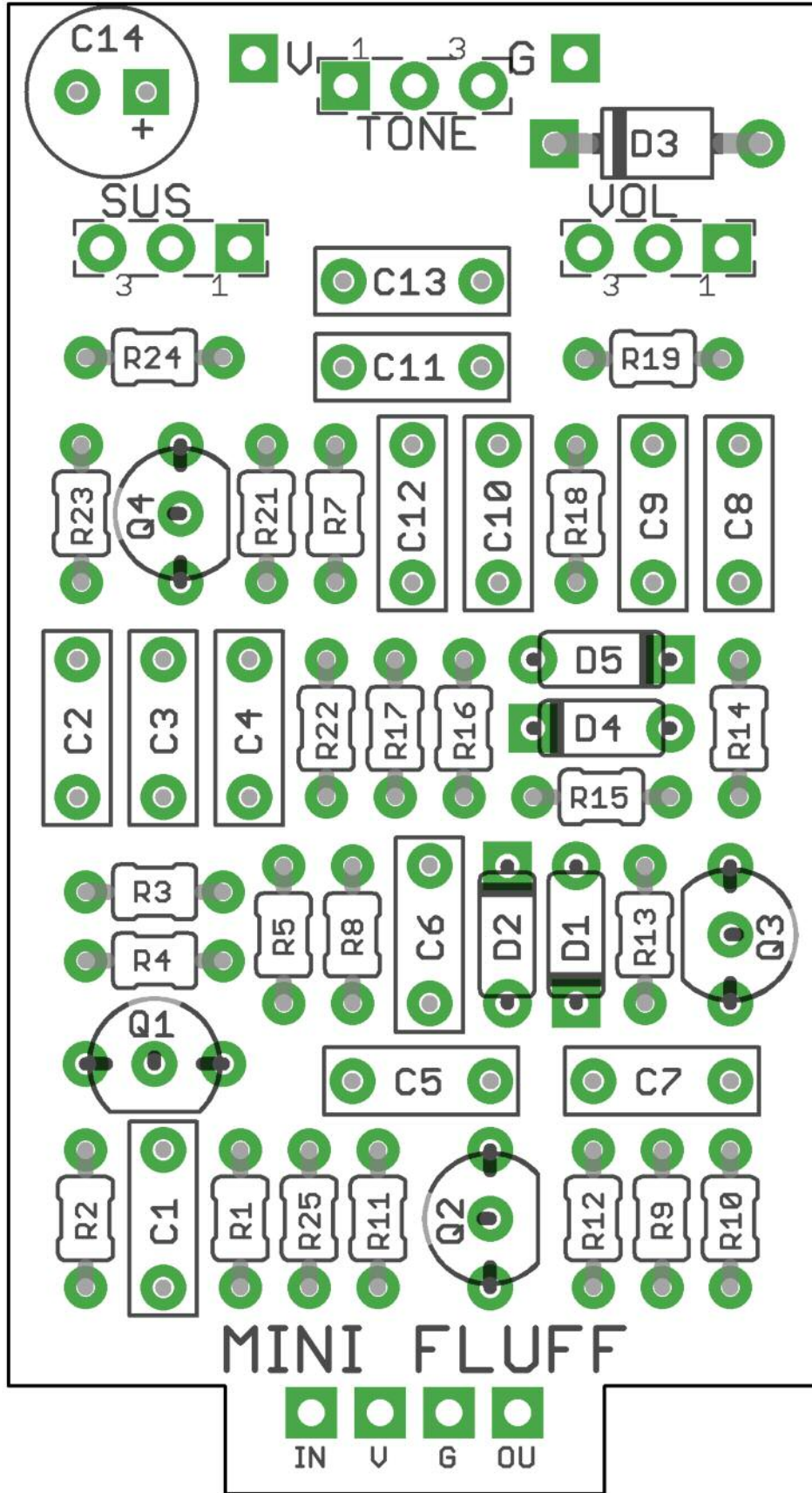
But really, get some 1/8W.

C14 is a power smoothing cap. This would normally be 100uf, but that ain't going to fit. The largest we've found that'll fit upright into the enclosure is 22uf.

## THAT SCOOPED MID-RANGE - NO THANKS!

The Big Muff has a distinctive scooped mid-range. In most cases this can be flattened out if desired. For the main variations listed in the first BOM page, this can be achieved by changing R18 and R19 to 39K, and C10 to 10n.





## Main Variations

# BOM

| BOM                 | 3rd (70s) | Green Russian | Black Russian | Civil War Russian | Triangle | 73#18 Ram Head | Violet Ram Head | NYC Reissue |
|---------------------|-----------|---------------|---------------|-------------------|----------|----------------|-----------------|-------------|
|                     |           |               |               |                   |          |                |                 |             |
| R1                  | 39K       | 39K           | 39K           | 39K               | 33K      | 33K            | 33K             | 39K         |
| R2                  | 100K      | 100K          | 100K          | 100K              | 100K     | 100K           | 100K            | 100K        |
| R3                  | 470K      | 470K          | 470K          | 470K              | 470K     | 470K           | 470K            | 510K        |
| R4                  | 100R      | 390R          | 390R          | 390R              | 150R     | 100R           | 100R            | 100R        |
| R5                  | 15K       | 12K           | 12K           | 12K               | 15K      | 12K            | 12K             | 10K         |
| R7                  | 1K        | 1K            | 1K            | 1K                | 1K       | 820R           | 560R            | 1K8         |
| R8                  | 8K2       | 10K           | 10K           | 10K               | 8K2      | 7K5            | 8K2             | 10K         |
| R9                  | 100K      | 100K          | 100K          | 100K              | 100K     | 100K           | 100K            | 100K        |
| R10                 | 470K      | 470K          | 470K          | 470K              | 470K     | 470K           | 470K            | 470K        |
| R11                 | 15K       | 12K           | 12K           | 12K               | 12K      | 12K            | 12K             | 10K         |
| R12                 | 100R      | 390R          | 390R          | 390R              | 150R     | 100R           | 100R            | 390R        |
| R13                 | 8K2       | 10K           | 10K           | 10K               | 8K2      | 7K5            | 8K2             | 10K         |
| R14                 | 100R      | 390R          | 390R          | 390R              | 150R     | 100R           | 100R            | 390R        |
| R15                 | 470K      | 470K          | 470K          | 470K              | 470K     | 470K           | 470K            | 470K        |
| R16                 | 100K      | 100K          | 100K          | 100K              | 100K     | 100K           | 100K            | 100K        |
| R17                 | 15K       | 12K           | 12K           | 12K               | 12K      | 12K            | 12K             | 10K         |
| R18                 | 100K      | 22K           | 22K           | 22K               | 33K      | 33K            | 33K             | 22K         |
| R19                 | 39K       | 20K           | 22K           | 20K               | 33K      | 33K            | 33K             | 22K         |
| R21                 | 100K      | 100K          | 100K          | 100K              | 100K     | 100K           | 100K            | 100K        |
| R22                 | 390K      | 470K          | 470K          | 470K              | 470K     | 470K           | 470K            | 470K        |
| R23                 | 2K2       | 2K            | 2K7           | 2K7               | 2K7      | 3K3            | 2K7             | 2K          |
| R24                 | 10K       | 10K           | 10K           | 10K               | 12K      | 12K            | 12K             | 10K         |
| R25                 | 1M        | 1M            | 1M            | 1M                | 1M       | 1M             | 1M              | 1M          |
| R26                 | 2K2       | 2K2           | 2K2           | 2K2               | 2K2      | 2K2            | 2K2             | 2K2         |
| C1                  | 100n      | 100n          | 100n          | 100n              | 100n     | 100n           | 100n            | 1u          |
| C2                  | 470p      | 470p          | 470p          | 560p              | 500p     | 470p           | 470p            | 470p        |
| C3                  | 1u        | 100n          | 100n          | 100n              | 100n     | 100n           | 100n            | 1u          |
| C4                  | 1u        | 100n          | 100n          | 100n              | 100n     | 150n           | 100n            | 1u          |
| C5                  | 470p      | 470p          | 470p          | 560p              | 500p     | 470p           | 470p            | 470p        |
| C6                  | 100n      | 47n           | 47n           | 47n               | 47n      | 47n            | 100n            | 1u          |
| C7                  | 1u        | 100n          | 100n          | 100n              | 100n     | 100n           | 100n            | 1u          |
| C8                  | 470p      | 470p          | 470p          | 560p              | 500p     | 470p           | 470p            | 470p        |
| C9                  | 100n      | 47n           | 47n           | 47n               | 47n      | 100n           | 100n            | 1u          |
| C10                 | 3n9       | 3n9           | 3n9           | 3n9               | 3n9      | 3n9            | 3n9             | 3n9         |
| C11                 | 10n       | 10n           | 10n           | 10n               | 10n      | 10n            | 10n             | 10n         |
| C12                 | 100n      | 100n          | 100n          | 100n              | 100n     | 100n           | 100n            | 1u          |
| C13                 | 100n      | 100n          | 100n          | 100n              | 100n     | 100n           | 100n            | 1u          |
| C14                 | 22u       | 22u           | 22u           | 22u               | 22u      | 22u            | 22u             | 22u         |
| Q1                  | 2N5088    | 2N5088        | 2N5088        | 2N5088            | 2N5088   | 2N5088         | 2N5088          | 2N5088      |
| Q2                  | 2N5088    | 2N5088        | 2N5088        | 2N5088            | 2N5088   | 2N5088         | 2N5088          | 2N5088      |
| Q3                  | 2N5088    | 2N5088        | 2N5088        | 2N5088            | 2N5088   | 2N5088         | 2N5088          | 2N5088      |
| Q4                  | 2N5088    | 2N5088        | 2N5088        | 2N5088            | 2N5088   | 2N5088         | 2N5088          | 2N5088      |
| D1                  | 1N4148    | 1N4148        | 1N4148        | 1N4148            | 1N4148   | 1N4148         | 1N4148          | 1N4148      |
| D2                  | 1N4148    | 1N4148        | 1N4148        | 1N4148            | 1N4148   | 1N4148         | 1N4148          | 1N4148      |
| D3                  | 1N4001    | 1N4001        | 1N4001        | 1N4001            | 1N4001   | 1N4001         | 1N4001          | 1N4001      |
| D4                  | 1N4148    | 1N4148        | 1N4148        | 1N4148            | 1N4148   | 1N4148         | 1N4148          | 1N4148      |
| D5                  | 1N4148    | 1N4148        | 1N4148        | 1N4148            | 1N4148   | 1N4148         | 1N4148          | 1N4148      |
| SUSTAIN TONE VOLUME | 100KA     | 100KA         | 100KA         | 100KA             | 100KA    | 100KA          | 100KA           | 100KA       |
|                     | 100KB     | 100KB         | 100KB         | 100KB             | 100KB    | 100KB          | 100KB           | 100KB       |
|                     | 100KA     | 100KA         | 100KA         | 100KA             | 100KA    | 100KA          | 100KA           | 100KA       |

# V3 79#2 - J Mascis

Based on what is supposedly one of J Mascis' favourite Fluffs.  
The original has true tone bypass which can be 'hacked' as detailed later in the document.

|            |      |                |        |            |      |
|------------|------|----------------|--------|------------|------|
| <b>C1</b>  | 1u   |                |        | <b>R1</b>  | 39K  |
| <b>C2</b>  | 470p |                |        | <b>R2</b>  | 100K |
| <b>C3</b>  | 1u   |                |        | <b>R3</b>  | 470K |
| <b>C4</b>  | 1u   |                |        | <b>R4</b>  | 100R |
| <b>C5</b>  | 470p |                |        | <b>R5</b>  | 15K  |
| <b>C6</b>  | 1u   | <b>Q1-4</b>    | MPSA18 | <b>R7</b>  | 1K   |
| <b>C7</b>  | 100n |                |        | <b>R8</b>  | 8K2  |
| <b>C8</b>  | 470p | <b>D1-2</b>    | 1N4148 | <b>R9</b>  | 100K |
| <b>C9</b>  | 1u   | <b>D3</b>      | 1N4001 | <b>R10</b> | 470K |
| <b>C10</b> | 3n9  | <b>D4-5</b>    | 1N4148 | <b>R11</b> | 15K  |
| <b>C11</b> | 10n  |                |        | <b>R12</b> | 100R |
| <b>C12</b> | 100n | <b>SUSTAIN</b> | 100KA  | <b>R13</b> | 8K2  |
| <b>C13</b> | 1u   | <b>TONE</b>    | 100KB  | <b>R14</b> | 100R |
| <b>C14</b> | 22u  | <b>VOLUME</b>  | 100KA  | <b>R15</b> | 470K |
|            |      |                |        | <b>R16</b> | 100K |
|            |      |                |        | <b>R17</b> | 15K  |
|            |      |                |        | <b>R18</b> | 22K  |
|            |      |                |        | <b>R19</b> | 39K  |
|            |      |                |        | <b>R21</b> | 100K |
|            |      |                |        | <b>R22</b> | 390K |
|            |      |                |        | <b>R23</b> | 2K2  |
|            |      |                |        | <b>R24</b> | 10K  |
|            |      |                |        | <b>R25</b> | 1M   |

# Tall Font Green Russian

Bass players' favourite. The feedback caps in the original are two 1nf in series, but that's the same as 500pf.

|            |      |                |        |            |      |
|------------|------|----------------|--------|------------|------|
| <b>C1</b>  | 100n |                |        | <b>R1</b>  | 39K  |
| <b>C2</b>  | 500p |                |        | <b>R2</b>  | 100K |
| <b>C3</b>  | 100n |                |        | <b>R3</b>  | 470K |
| <b>C4</b>  | 100n |                |        | <b>R4</b>  | 390R |
| <b>C5</b>  | 500p |                |        | <b>R5</b>  | 12K  |
| <b>C6</b>  | 47n  | <b>Q1-4</b>    | 2N5089 | <b>R7</b>  | 1K   |
| <b>C7</b>  | 100n |                |        | <b>R8</b>  | 10K  |
| <b>C8</b>  | 500p | <b>D1-2</b>    | 1N4148 | <b>R9</b>  | 100K |
| <b>C9</b>  | 47n  | <b>D3</b>      | 1N4001 | <b>R10</b> | 470K |
| <b>C10</b> | 3n9  | <b>D4-5</b>    | 1N4148 | <b>R11</b> | 12K  |
| <b>C11</b> | 10n  |                |        | <b>R12</b> | 390R |
| <b>C12</b> | 100n | <b>SUSTAIN</b> | 100KA  | <b>R13</b> | 10K  |
| <b>C13</b> | 100n | <b>TONE</b>    | 100KB  | <b>R14</b> | 390R |
| <b>C14</b> | 22u  | <b>VOLUME</b>  | 100KA  | <b>R15</b> | 470K |
|            |      |                |        | <b>R16</b> | 100K |
|            |      |                |        | <b>R17</b> | 12K  |
|            |      |                |        | <b>R18</b> | 22K  |
|            |      |                |        | <b>R19</b> | 20K  |
|            |      |                |        | <b>R21</b> | 100K |
|            |      |                |        | <b>R22</b> | 470K |
|            |      |                |        | <b>R23</b> | 2K7  |
|            |      |                |        | <b>R24</b> | 10K  |
|            |      |                |        | <b>R25</b> | 1M   |

# Creamy Dreamer

|            |      |                |        |            |        |
|------------|------|----------------|--------|------------|--------|
| <b>C1</b>  | 1u   |                |        | <b>R1</b>  | 39K    |
| <b>C2</b>  | 470p |                |        | <b>R2</b>  | 100K   |
| <b>C3</b>  | 47n  |                |        | <b>R3</b>  | 470K   |
| <b>C4</b>  | 1u   |                |        | <b>R4</b>  | Jumper |
| <b>C5</b>  | 470p |                |        | <b>R5</b>  | 15K    |
| <b>C6</b>  | 1u   | <b>Q1-4</b>    | 2N5089 | <b>R7</b>  | 1K     |
| <b>C7</b>  | 1u   |                |        | <b>R8</b>  | 8K2    |
| <b>C8</b>  | 470p | <b>D1-2</b>    | 1N4148 | <b>R9</b>  | 100K   |
| <b>C9</b>  | 1u   | <b>D3</b>      | 1N4001 | <b>R10</b> | 470K   |
| <b>C10</b> | 4n7  | <b>D4-5</b>    | 1N4148 | <b>R11</b> | 15K    |
| <b>C11</b> | 10n  |                |        | <b>R12</b> | Jumper |
| <b>C12</b> | 100n | <b>SUSTAIN</b> | 100KB  | <b>R13</b> | 8K2    |
| <b>C13</b> | 100n | <b>TONE</b>    | 100KA  | <b>R14</b> | Jumper |
| <b>C14</b> | 22u  | <b>VOLUME</b>  | 100KA  | <b>R15</b> | 470K   |
|            |      |                |        | <b>R16</b> | 100K   |
|            |      |                |        | <b>R17</b> | 15K    |
|            |      |                |        | <b>R18</b> | 47K    |
|            |      |                |        | <b>R19</b> | 47K    |
|            |      |                |        | <b>R21</b> | 100K   |
|            |      |                |        | <b>R22</b> | 390K   |
|            |      |                |        | <b>R23</b> | 2K2    |
|            |      |                |        | <b>R24</b> | 10K    |

# Stoned Cleric

Stoner heaven, based closely around a Ram's Head 74#1 but with different cans and a different emitter resistor in the first gain stage. Awesome stuff.

\*BC549C pinout is the opposite to that shown on the PCB, so flip them.

|            |      |                |         |            |      |
|------------|------|----------------|---------|------------|------|
| <b>C1</b>  | 100n |                |         | <b>R1</b>  | 33K  |
| <b>C2</b>  | 560p |                |         | <b>R2</b>  | 100K |
| <b>C3</b>  | 100n |                |         | <b>R3</b>  | 470K |
| <b>C4</b>  | 100n |                |         | <b>R4</b>  | 470R |
| <b>C5</b>  | 560p |                |         | <b>R5</b>  | 10K  |
| <b>C6</b>  | 1u   | <b>Q1-4</b>    | BC549C* | <b>R7</b>  | 1K   |
| <b>C7</b>  | 100n |                |         | <b>R8</b>  | 10K  |
| <b>C8</b>  | 560p | <b>D1-2</b>    | 1N4148  | <b>R9</b>  | 100K |
| <b>C9</b>  | 1u   | <b>D4-5</b>    | 1N4148  | <b>R10</b> | 470K |
| <b>C10</b> | 4n7  |                |         | <b>R11</b> | 10K  |
| <b>C11</b> | 10n  |                |         | <b>R12</b> | 150R |
| <b>C12</b> | 100n | <b>SUSTAIN</b> | 100KA   | <b>R13</b> | 10K  |
| <b>C13</b> | 100n | <b>TONE</b>    | 100KB   | <b>R14</b> | 150R |
| <b>C14</b> | 22u  | <b>VOLUME</b>  | 100KA   | <b>R15</b> | 470K |
|            |      |                |         | <b>R16</b> | 100K |
|            |      |                |         | <b>R17</b> | 10K  |
|            |      |                |         | <b>R18</b> | 33K  |
|            |      |                |         | <b>R19</b> | 33K  |
|            |      |                |         | <b>R21</b> | 100K |
|            |      |                |         | <b>R22</b> | 470K |
|            |      |                |         | <b>R23</b> | 2K7  |
|            |      |                |         | <b>R24</b> | 10K  |
|            |      |                |         | <b>R25</b> | 1M   |

# Csnd Supa Tonebender

'73 UK interpretation. The first clipping stage is removed which changes the sound to a mix of Tonebender-meets-Fluff. Heavy! Transistor pinout is reversed so flip them. There was an extra cap between the third gain stage and the tone section, but it'll sound just the same without it. If you want a 100% clone look elsewhere.

**C1** 100n  
**C2** 470p  
**C3** 100n  
**C4** 100n  
**C5** 470p  
**C6** empty  
**C7** 100n  
**C8** 470p  
**C9** 47n  
**C10** 4n7  
**C11** 10n  
**C12** 100n  
**C13** 100n  
**C14** 22u

**Q1-4** BC184C  
  
**D1-2** Empty  
**D3** 1N4001  
**D4-5** 1N4148  
  
**SUSTAIN** 100KA  
**TONE** 100KA  
**VOLUME** 100KA

**R1** 33k  
**R2** 100K  
**R3** 470K  
**R4** 100R  
**R5** 15K  
**R7** 820R  
**R8** 8K2  
**R9** 100K  
**R10** 470K  
**R11** 10K  
**R12** 100R  
**R13** 8K2  
**R14** 100R  
**R15** 470K  
**R16** 100K  
**R17** 15K  
**R18** 33K  
**R19** 33K  
**R21** 100K  
**R22** 390K  
**R23** 2K7  
**R24** 10K  
**R25** 1M

# B&M Champion Fuzz Unit

Another vintage British interpretation, pretty much identical to the Jumbo Tonebender. BC184C may be hard to come by, so try others. Looking for around 600hFE in Q1 and Q2, 150hFE in Q3.

**C1** 100n  
**C2** 470p  
**C3** 100n  
**C4** 100n  
**C5** 470p  
**C6** empty  
**C7** 100n  
**C8** 470p  
**C9** 47n  
**C10** 4n7  
**C11** 10n  
**C12** 100n  
**C13** 100n  
**C14** 22u

**Q1-4** BC184C  
  
**D1-2** empty  
**D3** 1N4001  
**D4-5** 1N4148  
  
**SUSTAIN** 100KA  
**TONE** 100KA  
**VOLUME** 100KA

**R1** 33K  
**R2** 100K  
**R3** 470K  
**R4** 100R  
**R5** 15K  
**R7** 820R  
**R8** 8K2  
**R9** 100K  
**R10** 470K  
**R11** 10K  
**R12** 100R  
**R13** 8K2  
**R14** 100R  
**R15** 470K  
**R16** 100K  
**R17** 15K  
**R18** 33K  
**R19** 33K  
**R21** 100K  
**R22** 390K  
**R23** 2K7  
**R24** 10K  
**R25** 1M

# Elk Sustainer

Japanese Big Muff clone recently resurrected with a Boris connection. The original is PNP/Posi Ground, but it sounds just the same in this NPN configuration.

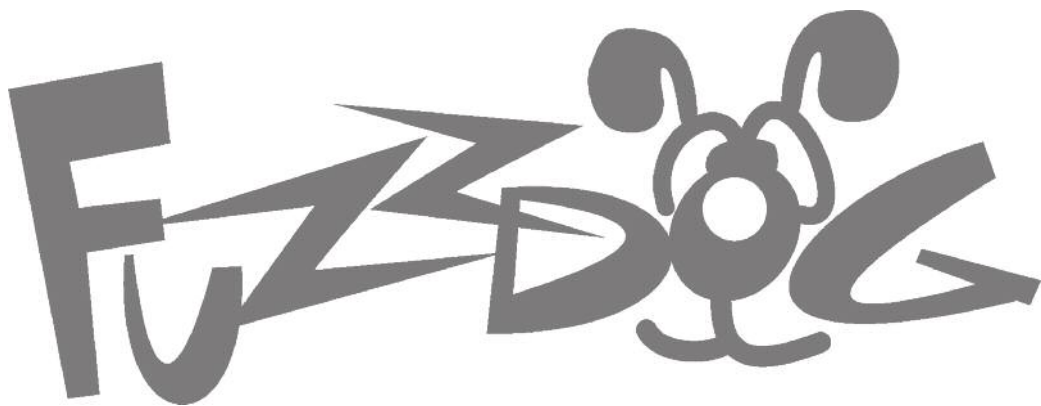
Values in parentheses are for the HizSus version. This also needs a 100p ceramic cap piggybacking R25 if you want to be 100%.

|            |            |                |        |            |            |
|------------|------------|----------------|--------|------------|------------|
| <b>C1</b>  | 100n       |                |        | <b>R1</b>  | 33K        |
| <b>C2</b>  | 560p       |                |        | <b>R2</b>  | 82K        |
| <b>C3</b>  | 100n       |                |        | <b>R3</b>  | 390K       |
| <b>C4</b>  | 100n       |                |        | <b>R4</b>  | 100R       |
| <b>C5</b>  | 560p       |                |        | <b>R5</b>  | 18K        |
| <b>C6</b>  | 100n (47n) | <b>Q1-4</b>    | 2N3904 | <b>R7</b>  | 1K         |
| <b>C7</b>  | 100n       |                |        | <b>R8</b>  | 8K2        |
| <b>C8</b>  | 560p       | <b>D1-2</b>    | 1N4148 | <b>R9</b>  | 82K        |
| <b>C9</b>  | 47n        | <b>D3</b>      | 1n4001 | <b>R10</b> | 390K       |
| <b>C10</b> | 3.3n       | <b>D4-5</b>    | 1N4148 | <b>R11</b> | 12K        |
| <b>C11</b> | 10n        |                |        | <b>R12</b> | 150R       |
| <b>C12</b> | 100n       | <b>SUSTAIN</b> | 50KB   | <b>R13</b> | 8K2        |
| <b>C13</b> | 100n       | <b>TONE</b>    | 50KB   | <b>R14</b> | 100R       |
| <b>C14</b> | 22u        | <b>VOLUME</b>  | 50KB   | <b>R15</b> | 390K       |
|            |            |                |        | <b>R16</b> | 82K        |
|            |            |                |        | <b>R17</b> | 18K        |
|            |            |                |        | <b>R18</b> | 39K        |
|            |            |                |        | <b>R19</b> | 39K        |
|            |            |                |        | <b>R21</b> | 100K (47K) |
|            |            |                |        | <b>R22</b> | 390K       |
|            |            |                |        | <b>R23</b> | 2K7 (1K)   |
|            |            |                |        | <b>R24</b> | 12K        |
|            |            |                |        | <b>R25</b> | 1M         |

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Everything else you need is in the  
general build doc you've already read.

Head back to that.



**[FuzzDog.co.uk](http://FuzzDog.co.uk)**