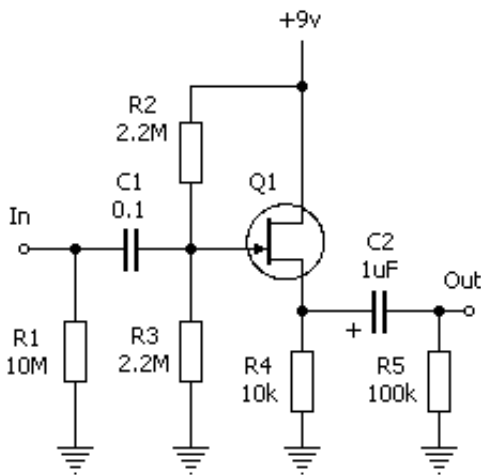


# AMZ Jfet Splitter

Multiple Buffered Outputs



This is the schematic of a simple jfet buffer from the [Basic Buffers article](#) in the AMZ Lab Notebook, with the addition of pulldown resistors at the input and output.

The circuit has a high input impedance and a low output impedance suitable for driving long cable runs or low impedance pedal inputs. Current draw is low and it is quiet and simple to construct. A stripboard (veroboard) layout and a pcb design are included in the [original article](#) about this circuit.

The jfet transistor Q1 can be any common small signal device such as the 2N5457, MPF102, or J201.

I was looking at the article for the buffer and realized how easy it would be to extend the circuit so that it is a signal splitter... a high impedance input buffer

High Current  
DC Filters

PCBs and  
Assembly

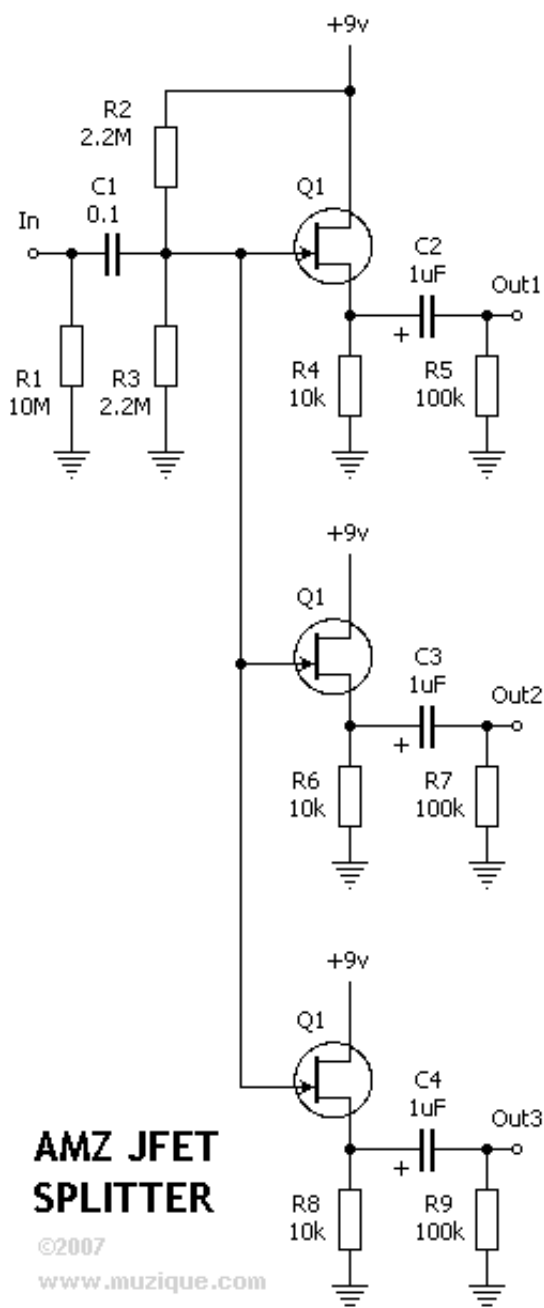
PCB &  
Printed  
Electronics

Photodiode  
Amplifier  
Circuit

[analog.com/Photodiode...](http://analog.com/Photodiode...)

Design Better Precision  
Photodiode Circuits-  
Download Technical  
Article

Generation  
Circuits PCB



but with multiple independent outputs. All that is required is to parallel extra source follower units with the original.

As you can see here, two more fets have been added to the original circuit. Each has separate low impedance drives from their source connections. Since the gate junction of a jfet is extremely high impedance, it does not change the input characteristics of

the buffer circuit when additional transistors are put in parallel.

With three totally independent buffered outputs, one can be dedicated to a tuner while the remaining two may be used to drive stereo pedal inputs or even two separate amplifiers.

This splitter would work great at the input of your pedal chain, immediately after the guitar so that the pickups are loaded by the high impedance of the buffer/splitter.

If you want to change the input impedance, the values of R2 and R3 can be altered to suit your taste. If the signal seems too crisp and bright, lower the values of those two resistors to 470k each. Always keep R2 equal to R3.

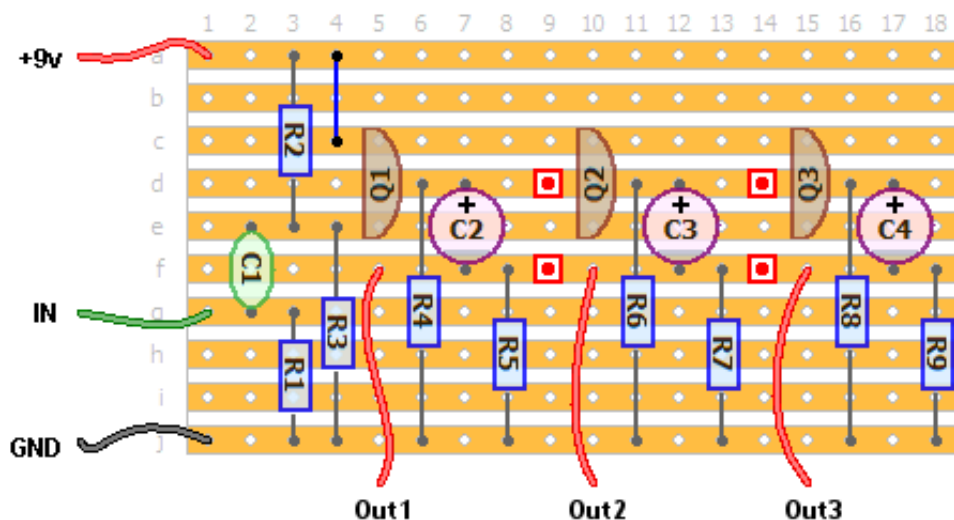
For an even more neutral sound with less loading of pickups (especially good for dual humbuckers), set the values of R2 and R3 at 10M, or even 22M.

It is not necessary to use all three outputs. If you have a need for only two, leaving the output jack of the third buffer without a plug in it will not cause a problem.

A fourth section could be similarly paralleled with the transistors shown here if a four-output splitter is required.

One more option would be to add a mute switch to any output that you need to be able to silence. As an example, if you want to be able to turn off Out3, you could connect an SPST in parallel with the R9 resistor. When open, the output performs as normal. When the switch is closed, output 3 is pulled to ground and no signal passes. Similar switches could be added across the Out1 and Out2 pull-down resistors if desired.

---



It is easy to modify the stripboard layout of the original buffer to accommodate the additional jfet sections. The gate and drain leads of each of the JFETs are connected so

R1: 10M  
R2: 2.2M  
R3: 2.2M  
R4: 10K  
R5: 100K  
R6: 10K  
R7: 100K  
R8: 10K  
R9: 100K  
C1: 0.1uF  
C2: 1.0uF  
C3: 1.0uF  
C4: 1.0uF  
Q1: J201  
Q2: J201  
Q3: J201  
©2007 Jack Orman  
www.muzique.com

only the source has to be isolated.

The four red boxes with red dots in the middle are places where the copper stripboard traces have to be cut to make the circuit function properly. These cuts will isolate the source connections of the transistors. Just cut away the copper while leaving the epoxy substrate intact.

If you want to make a pc board for the splitter, I have these images available for download: [PC Board](#) and [PCB parts placement](#). The pcb board is the same basic layout as the stripboard.

Source follower buffers are not too demanding about the choice of transistor so any jfet that you have in your parts bin would work in this circuit. Typical devices that I would suggest here are the J201, 2N5457, 2N5486, 2N3819, MPF102,

BF245, 2SK117, 2SK130 and similar parts.

To put a fourth output on the stripboard, merely duplicate columns 14 through 18 at the right side starting with the new column 19.

Easy to make, inexpensive and excellent performance. What more do you need from a pedal design? Make one and expand your pedalboard options!

---

©2007 Jack Orman  
All Rights Reserved

This page last modified on Friday, 26-Sep-2008 09:18:10 PDT

65152 hits since

[Lab Notebook Main Page](#)