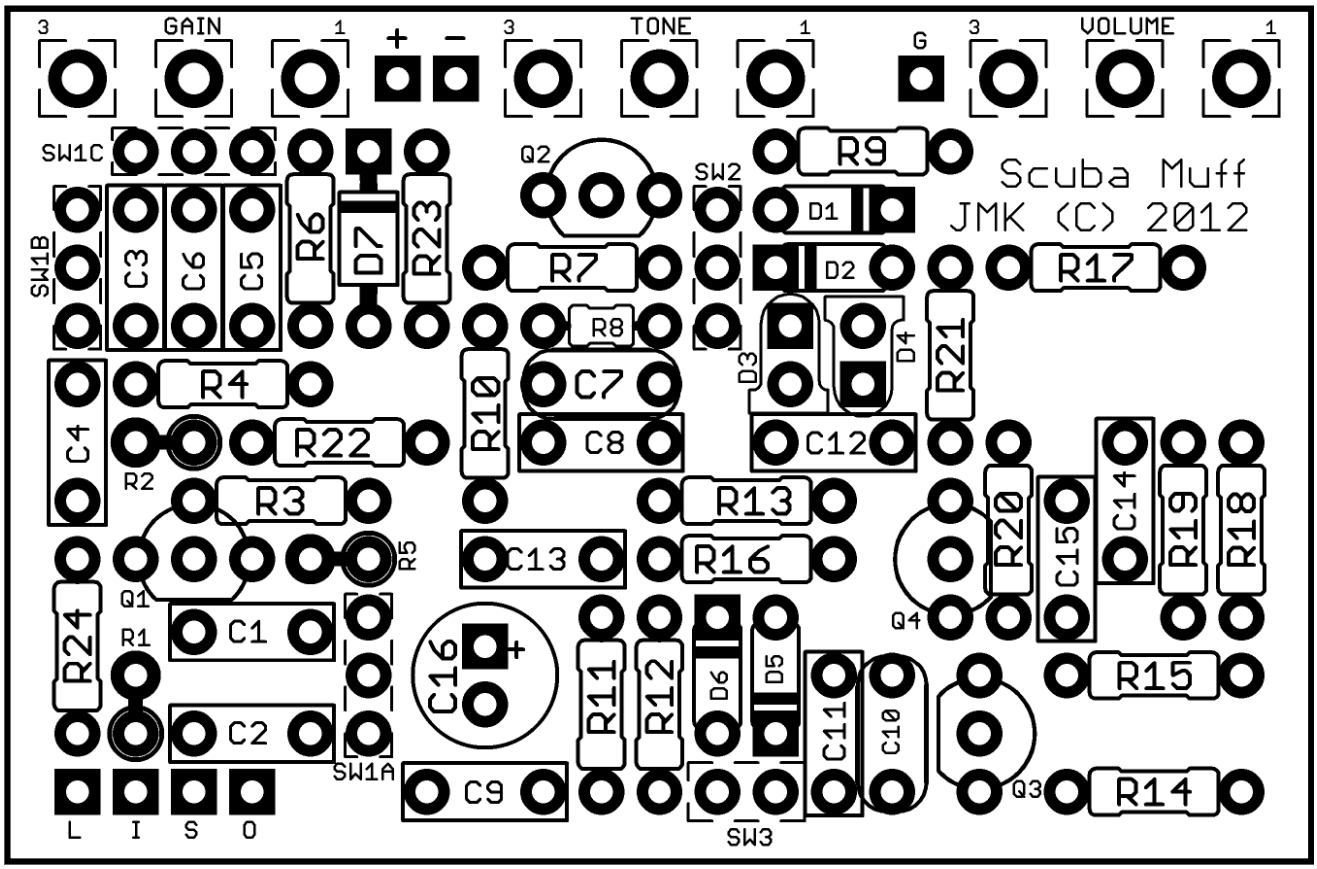
JMK PCBS PRESENTS...

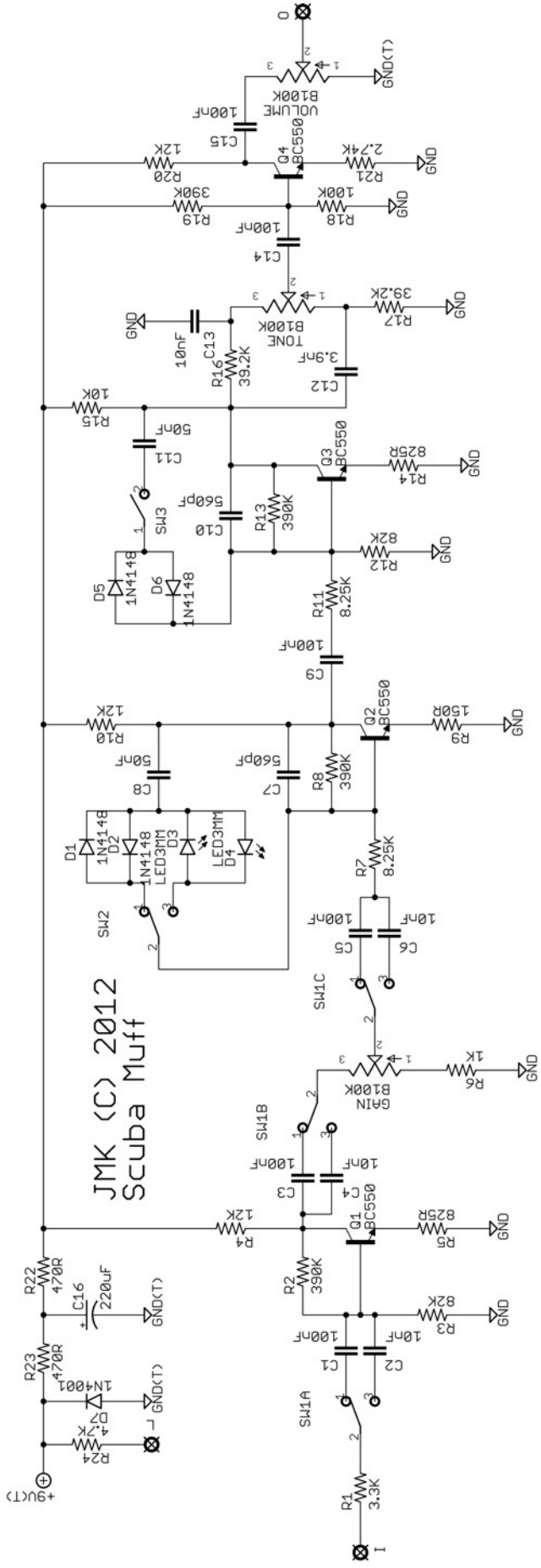
SCUBA MUFF

PCB AND SCHEMATIC ARTWORK (C) 2012 JMK PEDALS

VERSION 1: 6/19/2012



Resistors						Capactitors				Transitors	
R1	3.3K	R9	150R	R17	39.2K	C1	100nF	C9	100nF	Q1-Q4	BC550
R2	390K	R10	12K	R18	100K	C2	10nF	C10	560pF	Diodes	
R3	82K	R11	8.25K	R19	390K	C3	100nF	C11	50nF	D1, D2, D5, D6	1n4148
R4	12K	R12	82K	R20	12K	C4	10nF	C12	3.9nF	D3, D4	LED
R5	825R	R13	390K	R21	2.74K	C5	100nF	C13	10nF	D7	1N4001
R6	1K	R14	825R	R22	470R	C6	10nF	C14	100nF	Potentiometer	
R7	8.25K	R15	10K	R23	470R	C7	560pF	C15	100nF	LEVEL, TONE, GAIN	B100K
R8	390K	R16	39.2K	R24	4.7K	C8	50nF	C16	220uF	Switches	
										SW1 3PDT	SW2/3 SPDT



Build Notes

• The Scuba Muff is a variation of the classic Big Muff circuit, and features several modifications that give a lot of variety to the sound you'd expect from a Big Muff.

• Because the Scuba Muff is a variation of the muff, just about any 'version' of the Muff can be built using this PCB, including but not limited to: New York, Civil War, Ram's Head, and Triangle. The BOM above is generally taken from the now out of production Muff Diver, a popular boutique Muff that is no longer in production. If you want to use another Muff's BOM, simply compare the schematics and replace the values.

• Hooking up the PCB is pretty simple, but to clarify: L = the connection for the + end of an LED (CLR is R24); I = PCB Input; S = Ground for the Switch; O = PCB Output; + = 9V input; - = Ground for DC Jack; G = Extra Ground for 1/4" Jack

• It should be noted that there are several odd parts in the BOM for this project. Below are some common substitutes for these parts. You can find precise parts if you would like, but in most cases the common values are going to give the same tonal response.

Part Number	Original Value	Common Substitute
R5, R14	825R	820R
R7, R11	8.25K	8.2K
R16, R17	39.2K	39K
C8	50nF	47nF

• Like with most Big Muff Pedals, the Transistors are an integral part of the sound. Pretty much any NPN BiPolar Silicon transistor can be used. Keep in mind that the pinout of the transistor needs to be considered when installing. **We highly recommend socketing your transistors!** Socketing allows you to switch your transistors easily if you have installed them backwards, and also allows you to swap out and try other transistors to see which you like the best. Options to try include, but is not limited to: 2N5088, 2N5089, BC549, BC550, BC560, 2N5113, BC239.

• The mods that are applied to this PCB include three toggle switches:

  • SW1 is a 3PDT that switches the input cap, and the caps in the first two gain stages between the 'typical muff' value of 100nF, and the 'cornish' value of 10nF. It should be noted that the builder can substitute three SPDT switches/one SPDT and one DPDT switch in place of the single 3PDT toggle switches for finer control.

  • SW2 is a SPDT switch that chooses between two options for clipping diodes in the second gain stage. Your options for clipping diodes are limited only by your own imagination (or stock), but the BOM values are 1n4148 and 3mm Diffused LEDs.

  • SW3 is a SPST switch (though you will likely use a SPDT switch) which removes the clipping diodes from the third gain stage. This creates a unique, definitely 'non-muff' like fuzz sound. This is typically called the 'supa-bender' mod.

True Bypass Wiring Diagram