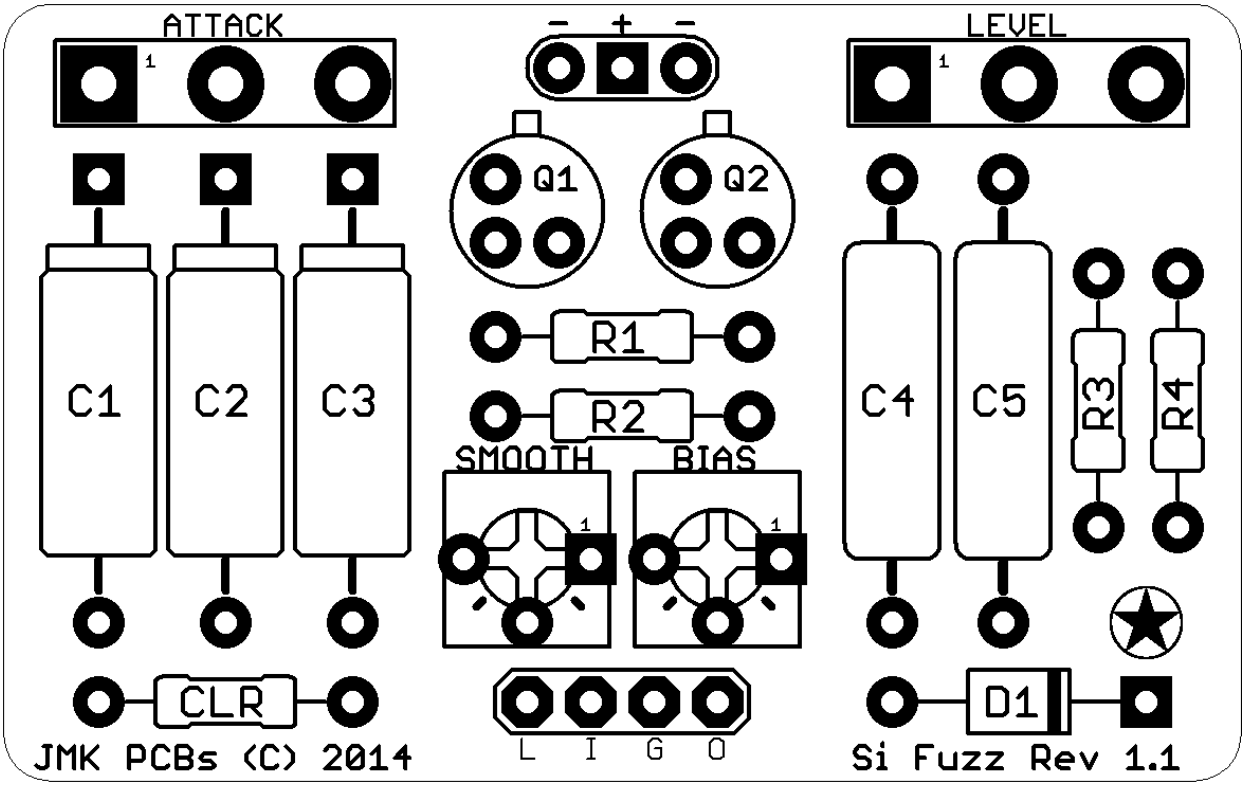
JMK PCBS PRESENTS...

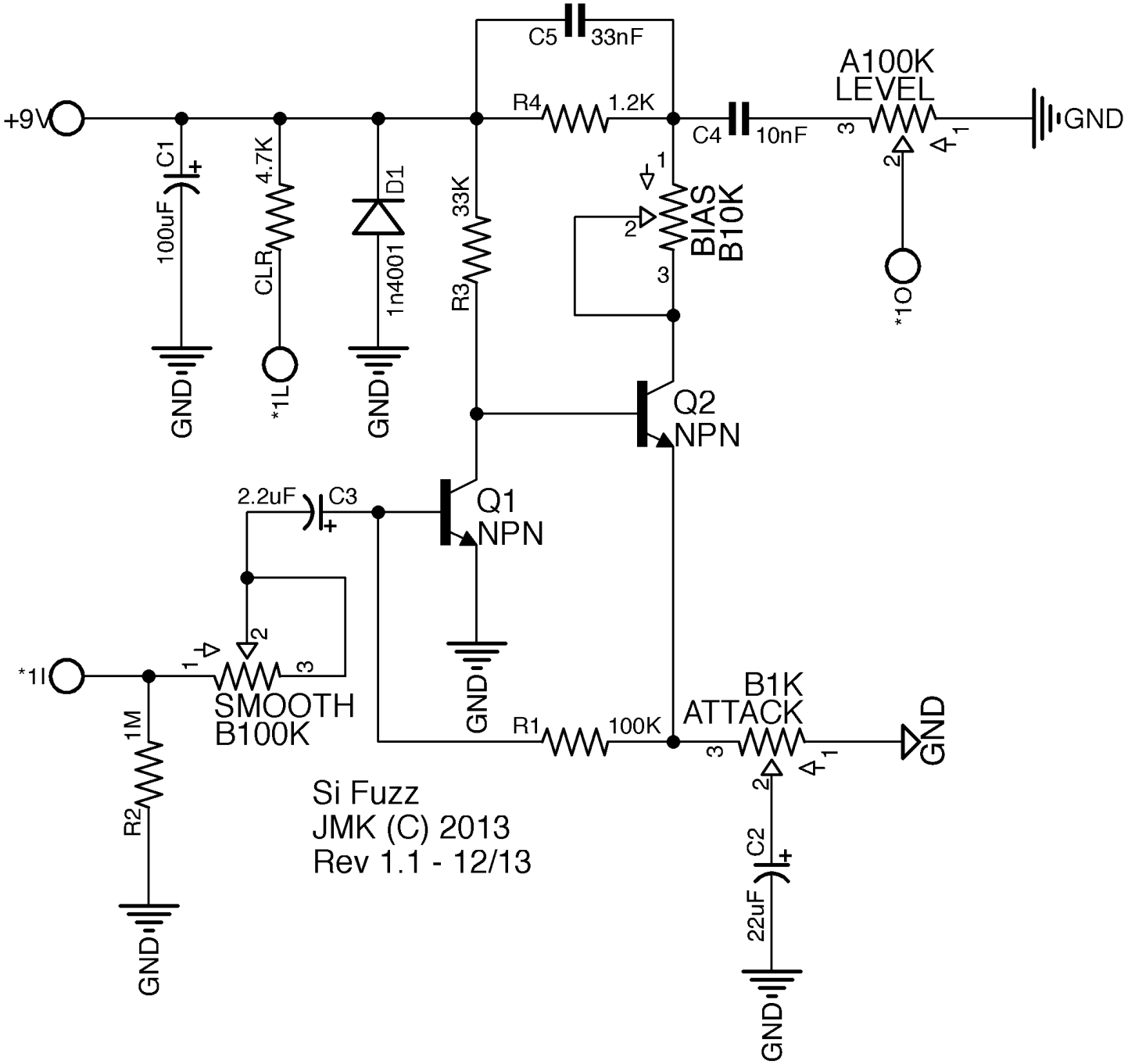
Si Fuzz

PCB AND SCHEMATIC ARTWORK (C) 2015 JMK PEDALS

VERSION 1.1: 5/8/2015



Resistors		Capactitors		Transistors	
R1	100K	C1	100uF	Q1, Q2	NPN
R2	1M	C2	22uF	Diodes	
R3	33K	C3	2.2uF	D1	1N4001
R4	1.2K	C4	10nF	Potentiometer	
CLR	4.7K	C5	33nF	ATTACK	B1K
				LEVEL	A100K
				SMOOTH	100K
				BIAS	10K



Build Notes

• The Si Fuzz is about as classic as it gets! Utilizing a pair of Silicon transistors, this fuzz is versatile, going from screaming to guttering, to smooth, to spluttering - all by adjusting the 4 main controls. The core circuit of the Si Fuzz has been heard on record after record, but this version boasts a few special features that will really allow the user to tweak their build to their hearts content.

• The Si Fuzz features our 'mojo' approach to it's bill of materials. While most people argue that there's no sonic difference between vintage or new stock parts, or between different types of formats for parts, the truth is... those axial parts look really cool! There's something about playing pedals that feature those old school stylings. So, the Si Fuzz has been designed to utilize axial format caps, and leaves room for larger, 1/2 watt resistors and 17.5mm caps. So, you can go with the shopping list we've shared and get carbon comps and axial film and electrolytic caps from mouser, or you can source your own NOS axial parts from wherever you get your mojo!

• One thing to keep in mind is that the axial parts recommended are just that - recommended. There are plenty of options to pick from when it comes to mojo parts! With that in mind, don't get worried if the parts you pick/get are a little bigger than you're used to. It's normal to have to 'squeeze' things onto the PCB a bit. The build has been verified with the parts that we've recommended, so don't worry too much if your parts fit onto your PCB a bit differently than you might be used to.

• There are two major differences between this version of the Si Fuzz and more classic approaches: 1) A smooth control, or pre-gain control, has been added as a trim pot to the front end of circuit. This control lowers the signal into the first gain stage, which in essence lowers the amount of fuzz, and allows for a 'smoother', less out of control sound. Turning it up is much like turning the volume control on your guitar down. 2) A capacitor has been added in parallel with the resistor bringing power to the 2nd transistor. This capacitor can be left out, but is featured on the 'Axis Fuzz' version of the circuit. We think it helps smooth some of the sound of the fuzz out, and prefer it in versus out, but the decision is yours.

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

• The original transistors for this design were BC108, however, we have chosen to use a 2N2222A transistor. We've also designed the Si Fuzz to feature the Metal Can TO18 format for the transistor. These are not the only transistors a builder could use, and certainly other formats could be used, including the common TO92 format. However, in order to used these formats, care must be made to match the pinout of the transistor you are using as compared to the pinout of the BC108 transistor this layout was designed for. **We highly recommend socketing your transistors!** Other options to try include, but are not limited to: BC108, BC109, 2N5088, 2N5089, BC109, 2N3904

Shopping List

Here's a list of part numbers for this build from the parts in the Mouser catalog. Check out the various specifications if you'd like to replace any parts from another source. Keep in mind that you will still need potentiometers, a Bypass switch, Jacks and other items to build a finished unit - this list is only good for populating the PCB.

BOM Value	Mouser Part #
R1	588-OD104JE
R2	588-OD105JE
R3	588-OD333JE
R4	588-OD122JE
CLR	588-OD472JE
C1	647-TVX1E101MAD1LS
C2	647-TVX1H220MAD
C3	647-TVX2C2R2MAD
C4	539-150103J400BB
C5	539-150333J250BB
Q1, Q2	625-1N4001E-E3/73
D1	625-1N4001E-E3/73
Trim 1	652-3362P-1-103LF
Trim 2	652-3362P-1-104LF

True Bypass Wiring Diagram