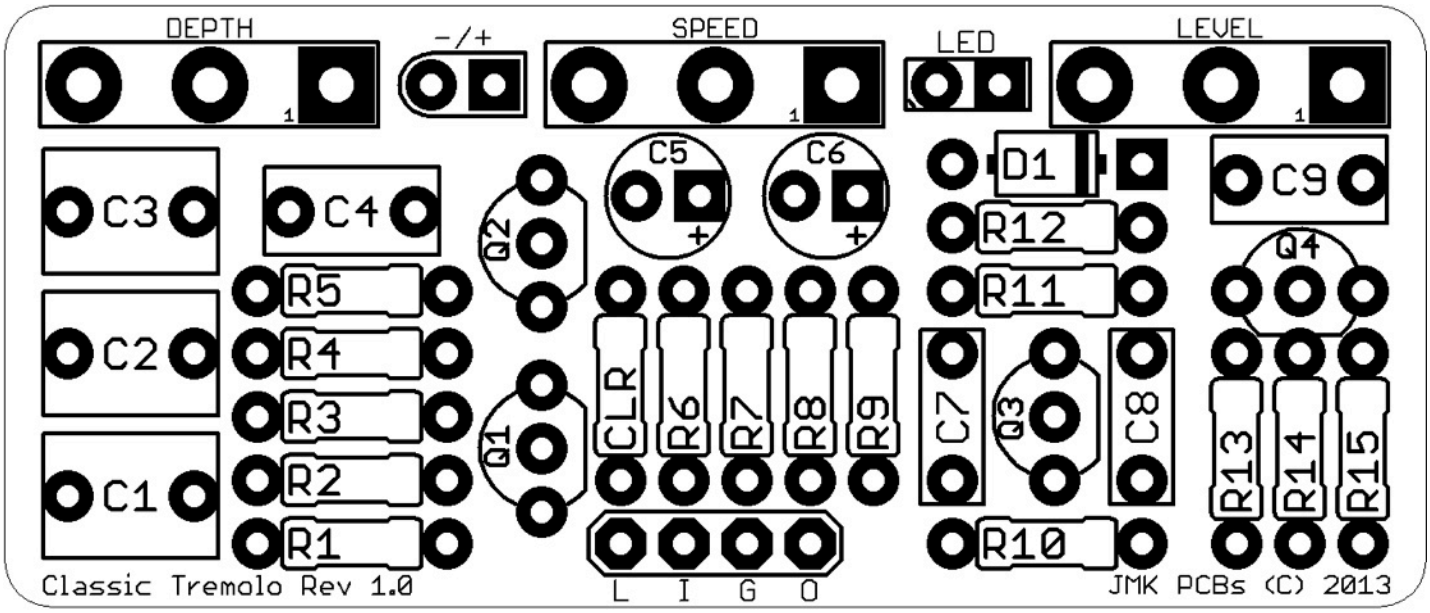
JMK PCBS PRESENTS...

CLASSIC TREMOLO

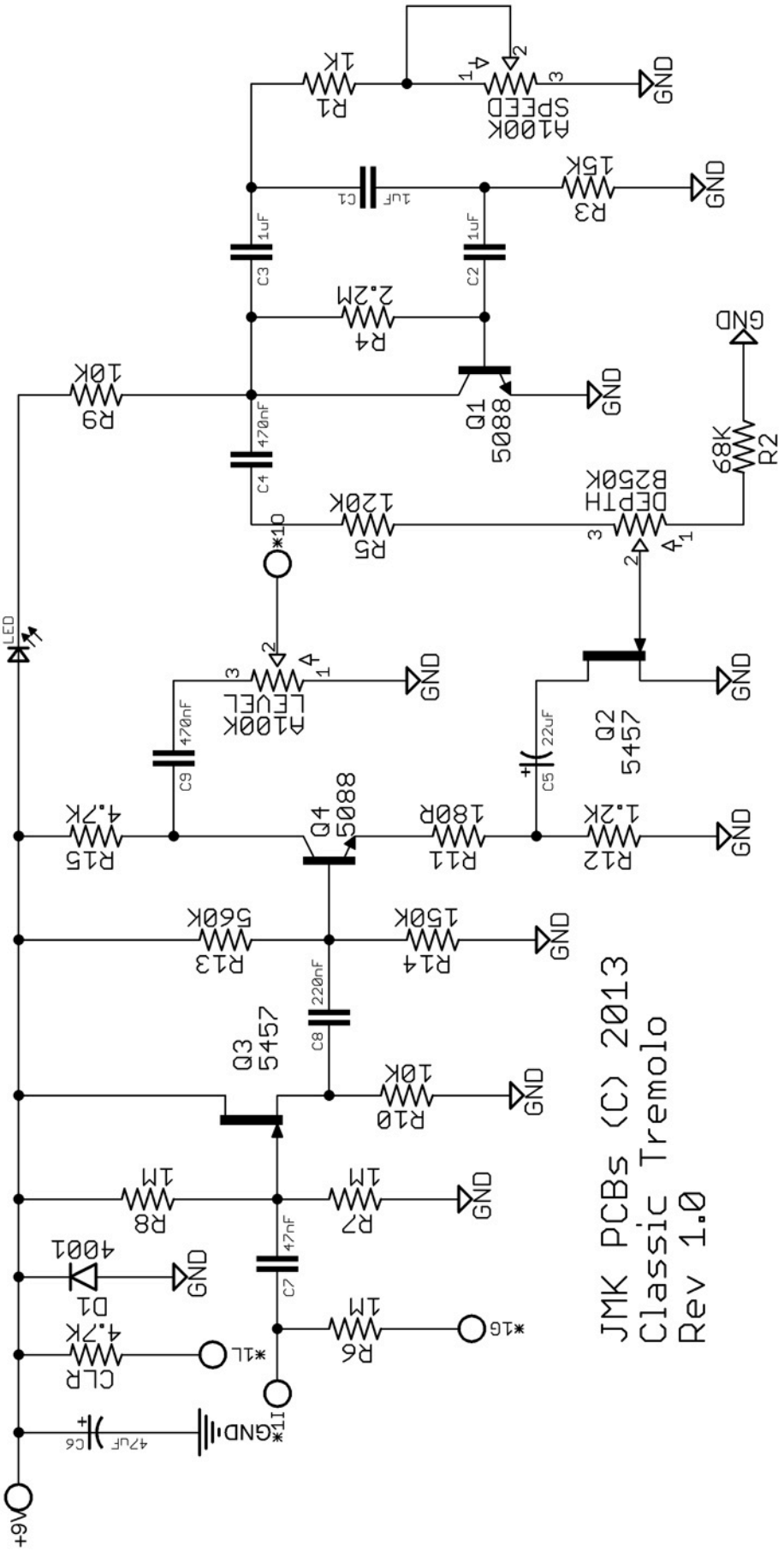
PCB AND SCHEMATIC ARTWORK (C) 2013 JMK PEDALS

VERSION 1.0.1: 8/7/2013



Resistors				Capactitors				Semiconductors	
R1	1K	R9	10K	C1	1uF	C6	47uF*	Q1, Q4	2N5088
R2	68K	R10	10K	C2	1uF	C7	47nF	Q2, Q3	2N5457
R3	15K	R11	180R	C3	1uF	C8	220nF	Diodes	
R4	2.2M	R12	1.2K	C4	470nF	C9	470nF	D1	1N4001
R5	120K	R13	560K	C5	22uF*			Potentiometer	
R6	1M	R14	150K					DEPTH	B250K
R7	1M	R15	4.7K					SPEED	A100K
R8	1M	CLR	4.7K					LEVEL	A100K

* indicates Aluminum Electrolytic Capacitor



Build Notes

• The Classic Tremolo is nothing new - it's a transistor bias tremolo, that pretty much is the same as the EA trem that's been popular for a long time now. What sets this tremolo apart is how natural it sounds while remaining a relatively inexpensive build.

• The only major modification between this version of the original is that there is a rate LED attached to the speed of the tremolo, meaning that you can indicate just how quickly the trem is tremolating your signal. Do not forget to include this part, even if you don't plan to use one in your build! The tremolo will not work without an LED there. Even if you end up having to jumper it, however you may need to socket R9 and try higher values of resistor (12-15K) to get the tremolo to behave correctly.

• The speed indication LED can be used as a bypass indicator instead of using the L pad at the input area. If you would like to use it as a bypass indicator, we recommend disconnecting the round pad/negative lead of the LED from the board, and instead routing a wire from that lead to the switch that you're using for Bypass. That round pad connects to ground, and if you need, you can connect back to that point with the common pole of the switch.

• About the **potentiometers** - There seems to be no consensus on the values for the speed, volume and depth pots, with maybe the exception of the depth pot. We've seen values for the volume pots from 10K up to 100K, but always Log (A) taper. We've seen values from 25K up to 250K for the speed pot, but all over the place in terms of taper - log, lin, rev log, (A, B, C). Generally we've seen that B250K pots are used for the depth, but you can also potentially use B100K pots as well, which is interesting. What we recommend in the above BOM should not be considered definite values, but should be considered experiment starting places. These are good values, but feel free to try anything you'd like, and look for other versions out there.

• The Classic Tremolo can be very loud! Often this pedal can be used as a boost, along with it being a trem. Turn the depth and speed down, and you'll find a wide range of boost with a distinct tone given by the transistor circuitry. Great for a solo boost with a little bit of volume texture.

• 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 Jack; LED is the connections for the speed indicator LED (Square pad is for the longer lead of the LED)

• Like with most transistor based pedals, the Transistors you use are an integral part of the sound. Pretty much any NPN BiPolar Silicon transistor can be used instead of the stock 2N5088s, and pretty much any JFet can be used in place of the stock 2N5457s. 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.

True Bypass Wiring Diagram