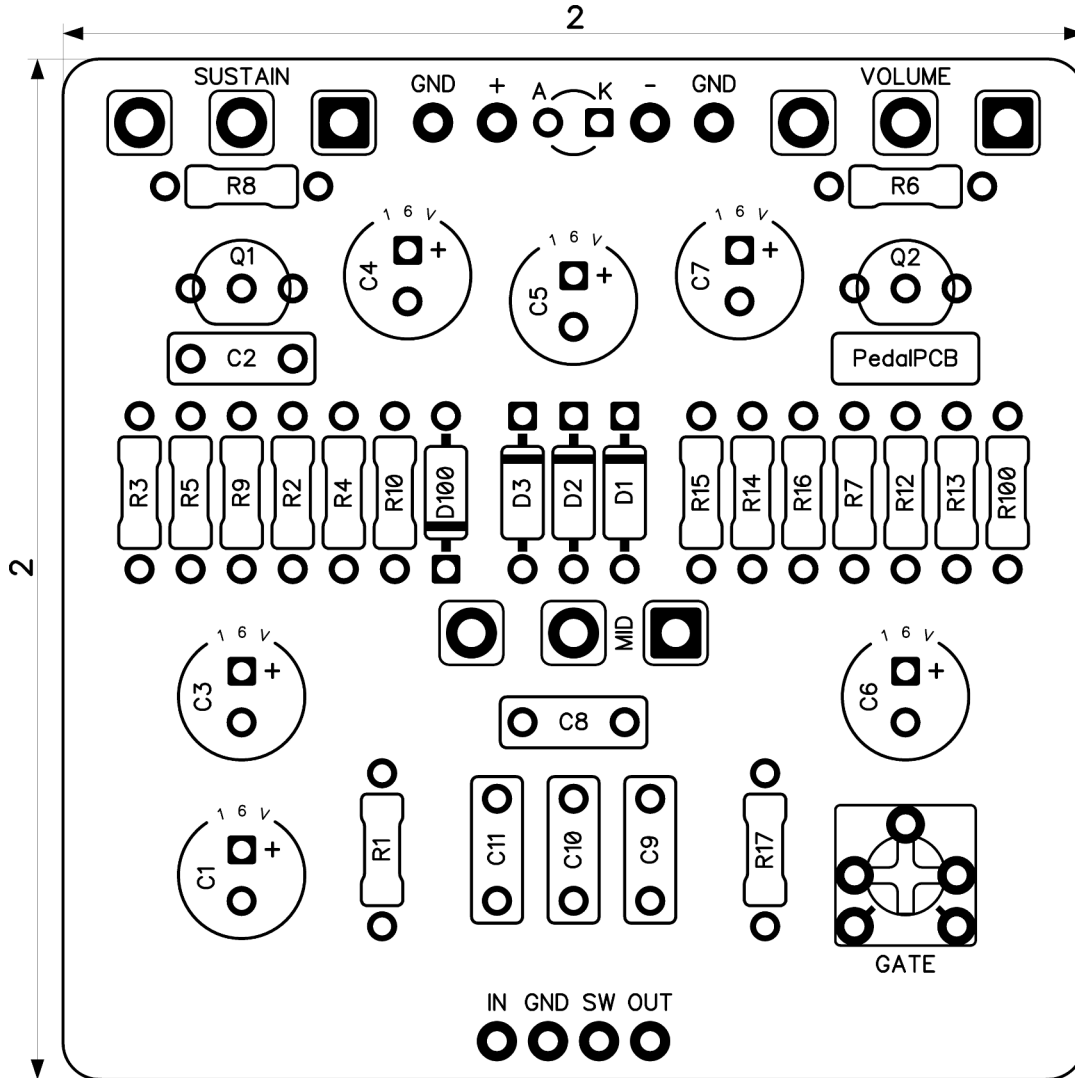




PedalPCB

Sergeant Fuzz

Revised 8/16/23



CONTROLS AND FEATURES

- Volume
- Sustain
- Mid
- Gate (Internal trim pot)

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LOCATION	VALUE	TYPE	NOTES
R1	1M	Resistor, 1/4W	
R2	33K	Resistor, 1/4W	
R3	100K	Resistor, 1/4W	
R4	10K	Resistor, 1/4W	
R5	22K	Resistor, 1/4W	
R6	47K	Resistor, 1/4W	
R7	1K	Resistor, 1/4W	
R8	33R	Resistor, 1/4W	
R9	220K	Resistor, 1/4W	
R10	470R	Resistor, 1/4W	
R12	68K	Resistor, 1/4W	
R13	3K3	Resistor, 1/4W	
R14	4K7	Resistor, 1/4W	
R15	18K	Resistor, 1/4W	
R16	18K	Resistor, 1/4W	
R17	10K	Resistor, 1/4W	
R100	4K7	Resistor, 1/4W	* LED current limiting resistor
C1	2u2	Electrolytic capacitor, 5mm	
C2	100p	Ceramic capacitor	
C3	10u	Electrolytic capacitor, 5mm	
C4	2u2	Electrolytic capacitor, 5mm	
C5	220u	Electrolytic capacitor, 5mm	
C6	220u	Electrolytic capacitor, 5mm	
C7	1u	Electrolytic capacitor, 5mm	
C8	56n	Film capacitor, 7.2 x 2.5mm	
C9	22n	Film capacitor, 7.2 x 2.5mm	
C10	22n	Film capacitor, 7.2 x 2.5mm	
C11	10n	Film capacitor, 7.2 x 2.5mm	
D1	1N4001	Standard recovery diode, DO-41	
D2	1N4001	Standard recovery diode, DO-41	
D3	1N4001	Standard recovery diode, DO-41	
D100	1N5817	Schottky diode, DO-41	
Q1	BC319	BJT transistor, NPN TO-92	
Q2	PN2222A	BJT transistor, NPN TO-18	
GATE	1K	Trimmer potentiometer, 3362P type	
VOLUME	B250K	16mm right-angle PCB mount pot	
MID	A10K	16mm right-angle PCB mount pot	
SUSTAIN	B5K	16mm right-angle PCB mount pot	



The circuit schematic diagram illustrates the internal components of a guitar pedal, organized into several functional sections:

- Input Section:** The signal enters through an "IN" jack, passes through resistor R1 (1M), capacitor C1 (2uF), and resistor R2 (33K) before reaching the base of transistor Q1 (BC319).
- Biasing and Coupling:** Resistor R3 (100K) provides a voltage divider from VCC to the base of Q1. Capacitor C2 (100pF) couples the output of Q1 to the base of transistor Q2 (PN2222A). Resistor R4 (10K) connects the emitter of Q1 to ground.
- Q2 Stage and Output Driver:** Transistor Q2 is configured as a common-emitter amplifier. Its base is biased by a network of resistors R5 (22K), R6 (47K), and R7 (1K) connected to VCC and ground. A gate control input is provided via a potentiometer labeled "GATE 1K". The collector of Q2 is connected to VCC through resistor R12 (68K) and has a DC voltage label of "2.6V (Q2 Collector)".
- Tone and Volume Controls:** The signal path continues through capacitors C3 (10uF) and C4 (2uF), followed by a volume control potentiometer ("VOLUME B250K") and another coupling capacitor C5 (220uF). Resistor R8 (33R) is placed after C5.
- Output and LED Indicator:** The final output stage includes a sustain potentiometer ("SUSTAIN B5K"), diodes D1 and D2 (4001), and a push-button switch. The LED indicator section consists of an LED, resistor R100 (4K7), and a switch labeled "SWGND".
- Power and Grounding:** The circuit is powered by a VCC supply and grounded at multiple points, including a "SWGND" terminal and various ground connections for capacitors and resistors.

