CAVEDWELLER2

FX TYPE: Delay

Enclosure Size: 1590B

Based on the 2015 Cave Dweller

Overview

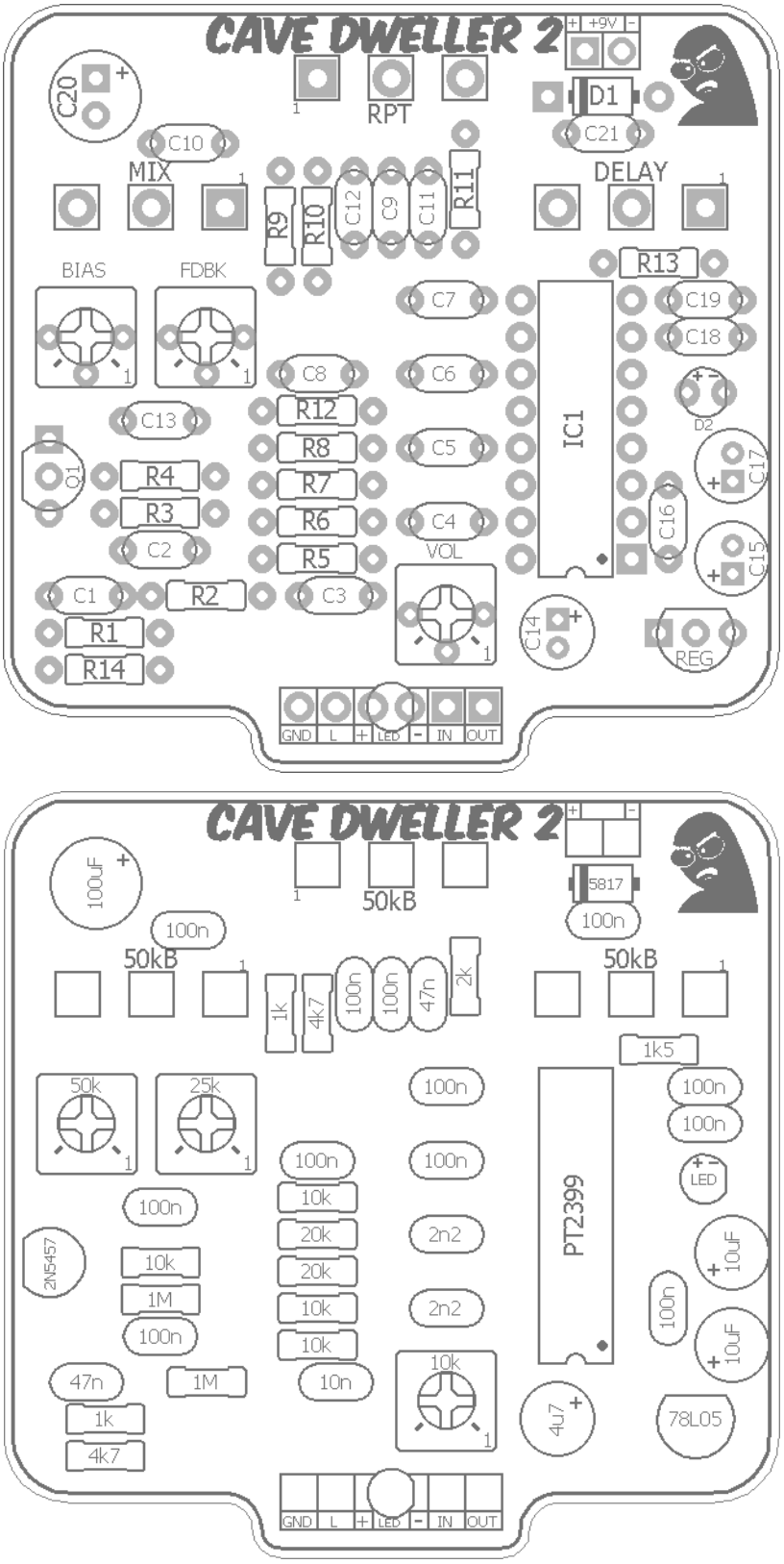
The Cave Dweller 2 is based on the 2015 ed. of the Cave Dweller project at madbeanpedals but re-done in an etchable format. It is a low-parts count PT2399 delay with the typical controls. It isn't based on any particular delay circuit.

Controls

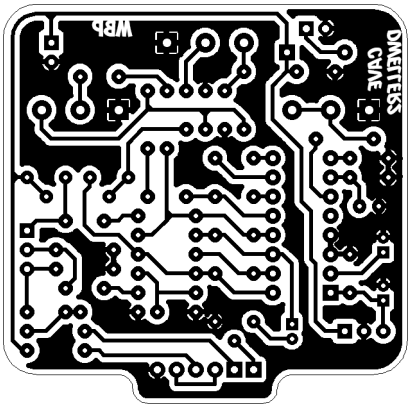
- **Mix, Delay, RPT:** Standard delay controls.
- **Vol (trim):** Sets the output volume of the effect.
- **FDBK (trim):** Sets the maximum number of repeats when the RPT is all the way up.
- **Bias (trim):** This trimmer should be set so that the drain of Q1 is around 2/3rd of the supply voltage. So, for 9v operation adjust the Bias trimmer until Q1 drain is about 6v. This is a general guide: use you ear to decide where proper bias is achieved.

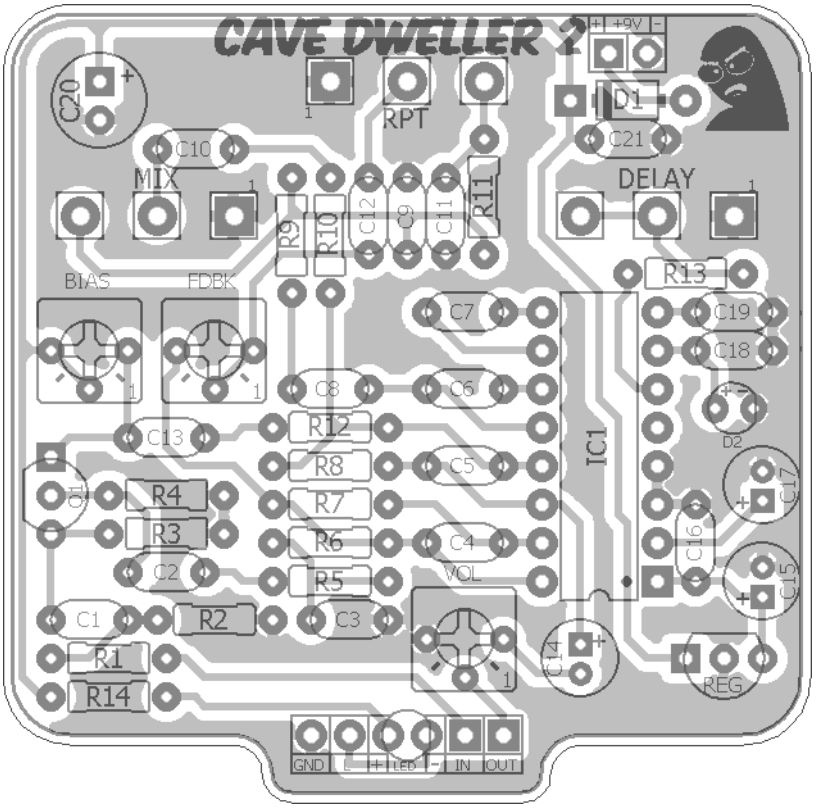
Notes

- You should be able to run the Cave Dweller 2 at higher voltages like 12v, 15v or even 18v (D2 is meant to prevent the input of the PT2399 from clipping at higher voltages). If you only plan on using 9v, you can omit D2. Just be sure to set the Bias trim accordingly whatever supply voltage you decide on.
- R11 and C11 do the main tone shaping on the delay repeats. You can play with these values to achieve darker or brighter results.


CAVE DWELLER 2
+9V
C20
C10
MIX
RPT
D1
C21
DELAY
R9
R10
C12
C9
C11
R11
R13
BIAS
FDBK
C7
C19
C18
C8
C6
C13
R12
R8
C5
IC1
D2
Q1
R4
R7
C17
R3
R6
C4
C16
C2
R5
VOL
C15
C1
R2
C3
R1
C14
REG
R14
GND
L
+
LED
-
IN
OUT
CAVE DWELLER 2
100uF
5817
50kB
100n
50kB
50kB
1k
4k7
100n
100n
47n
2k
1k5
50k
25k
100n
100n
100n
LED
PT2399
100n
10k
20k
2n2
10uF
2N5457
10k
1M
100n
20k
10k
2n2
100n
10uF
47n
1M
10k
10n
4u7
78L05
1k
4k7
GND
L
+
LED
-
IN
OUT

2.1”W x 2.075” H

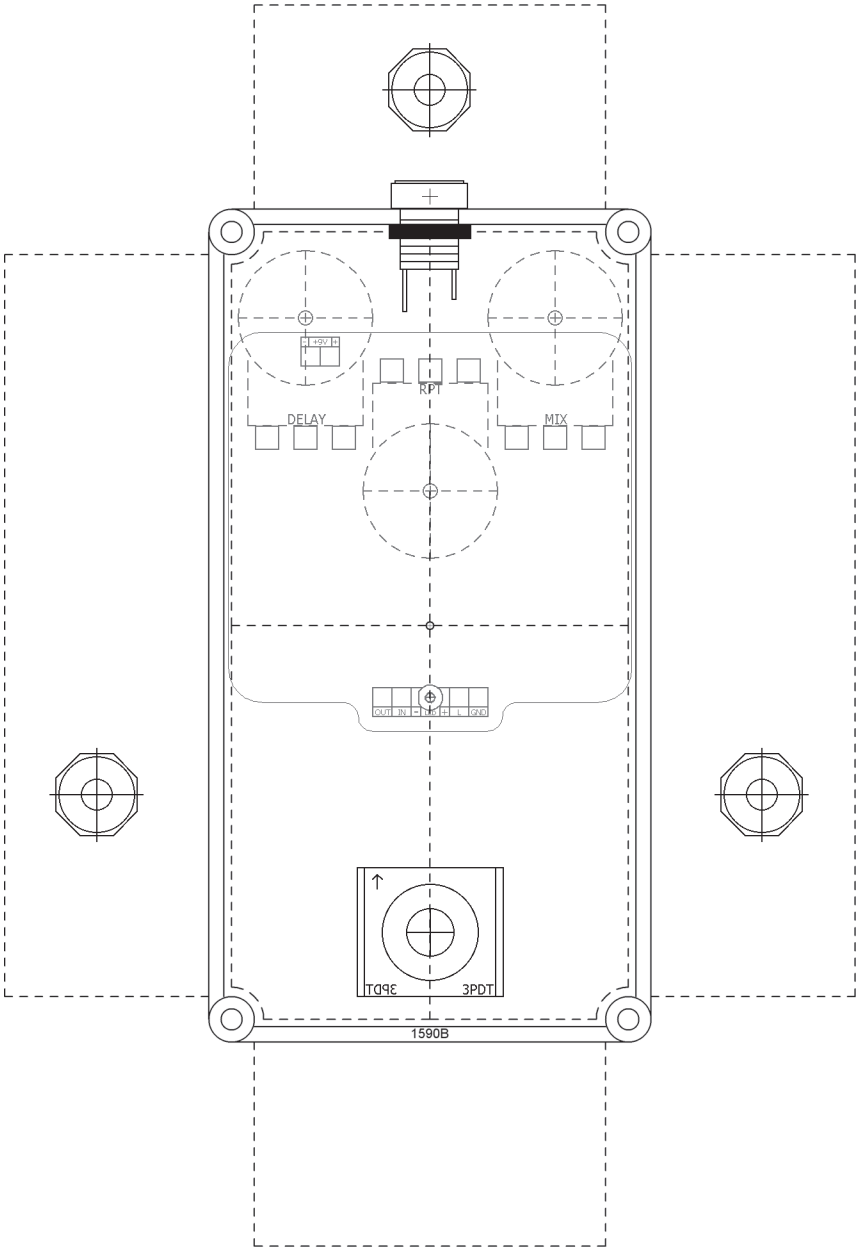

WBB
DWEETEES
CAVE

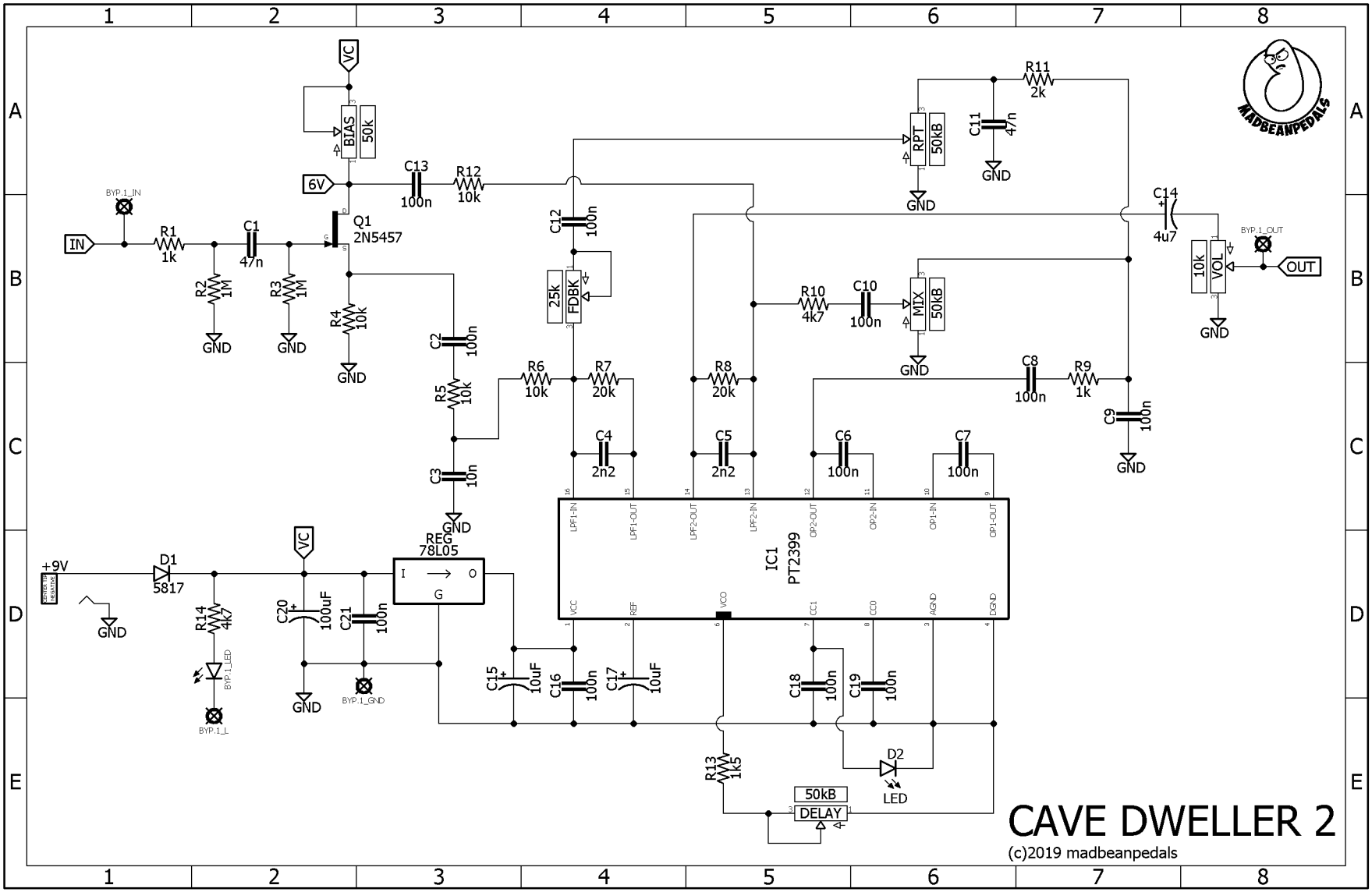

CAVE DWELLER 2
+9V
C20
C10
MIX
RPT
D1
C21
DELAY
R11
R9
R10
C12
C9
C11
BIAS
FDBK
R13
C7
C19
C18
C8
C6
R12
C13
R8
C5
IC1
D2
C17
R4
R3
R7
R6
C4
C16
C2
R5
VOL
C15
C1
R2
C3
R1
R14
C14
REG
GND
IN
OUT

Resistors		Caps		Diodes	
R1	1k	C1	47n	D1	1N5817
R2	1M	C2	100n	D2	LED
R3	1M	C3	10n	Transistors	
R4	10k	C4	2n2	Q1	2N5457
R5	10k	C5	2n2	IC	
R6	10k	C6	100n	IC1	PT2399
R7	20k	C7	100n	Regulator	
R8	20k	C8	100n	REG	LM78L05
R9	1k	C9	100n	Trimmers	
R10	4k7	C10	100n	BIAS	50k
R11	2k	C11	47n	FDBK	25k
R12	10k	C12	100n	VOL	10k
R13	1k5	C13	100n	Pots	
R14	4k7	C14	4u7	DELAY	50kB
		C15	10uF	MIX	50kB
		C16	100n	RPT	50kB
		C17	10uF		
		C18	100n		
		C19	100n		
		C20	100uF		
		C21	100n		

Value	QTY	Type	Rating
1k	2	Metal / Carbon Film	1/4W
1k5	1	Metal / Carbon Film	1/4W
2k	1	Metal / Carbon Film	1/4W
4k7	2	Metal / Carbon Film	1/4W
10k	4	Metal / Carbon Film	1/4W
20k	2	Metal / Carbon Film	1/4W
1M	2	Metal / Carbon Film	1/4W
2n2	2	Film	25v min.
10n	1	Film	25v min.
47n	2	Film	25v min.
100n	12	Film	25v min.
4u7	1	Electrolytic	25v min.
10uF	2	Electrolytic	25v min.
100uF	1	Electrolytic	25v min.
1N5817	1		
LED	1	Yellow, Diffused	3 or 5mm
2N5457	1	or, J201, MPF102	
PT2399	1		
LM78L05	1		
50k	1	Bourns 3362p	
25k	1	Bourns 3362p	
10k	1	Bourns 3362p	
50kB	3	PCB Right Angle	16mm

Note: *Drill Guides are approximate and may require tweaking depending on the types of jacks, switches and pots you use.*




CAVE DWELLER 2
(c)2019 madbeanpedals
IC1
PT2399
REG
78L05
Q1
2N5457
BIAS
50k
RPT
50kB
MIX
50kB
FDBK
25k
VOL
10k
DELAY
50kB
LED
D1
5817
D2
+9V
IN
OUT
GND
VC
6V
R1 1k
R2 1M
R3 1M
R4 10k
R5 10k
R6 10k
R7 20k
R8 20k
R9 1k
R10 4k7
R11 2k
R12 10k
R13 1k5
R14 4k7
C1 47n
C2 100n
C3 10n
C4 2n2
C5 2n2
C6 100n
C7 100n
C8 100n
C9 100n
C10 100n
C11 47n
C12 100n
C13 100n
C14 4u7
C15 10uF
C16 100n
C17 10uF
C18 100n
C19 100n
C20 100uF
C21 100n
BYP.1_IN
BYP.1_OUT
BYP.1_GND
BYP.1_LED
BYP.1_L