## 3510 VCADSR envelope generator

The 3510 vcadsr is based on the EFM VC-RADSR. It is a simple low cost solution to the usual high cost and complexity of voltage controlled adsrs.

When Q7 is turned on by a gate the collector goes low. C5 is charged and quickly discharges. A low going pulse is applied to the 555 trigger input on pin 2. Current flow through Q7 causes Q8 to turn on and holds the 555 reset pin4 high. R25 holds pin9 of the 4052 U2 high as long as there is a high gate.

The 555s output goes high and holds pin10 of the 4052 high. The 4052 switches pin3 to pin4 and pin13 to pin 11. The voltage bias on Q5 controls the current flow from Q6s collector through R17 to the roll your own OTA (Q1,2,3,4). (see VCF1-3521 for a loose description) In turn controlling the amount of current used to charge C3.

When the voltage on pin1 of U2a reaches the 555s reset threshold (U3 pin5). The 555s output (pin2) goes low and so does pin10 of the 4052 (U1)

Q5s bias voltage is switched to pin4 (decay) and the ref voltage used to set the charge for C6 is switches to pin15 (sustain).
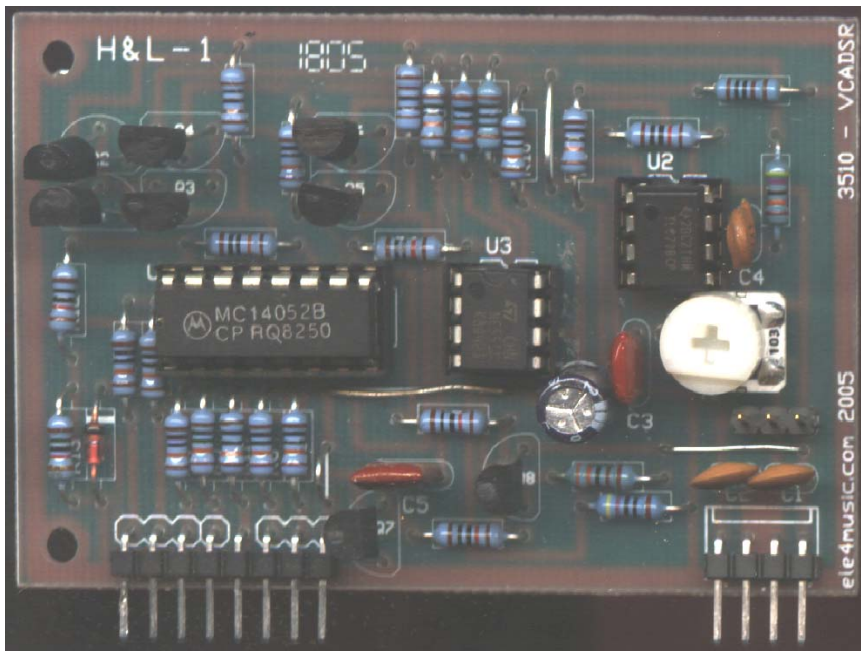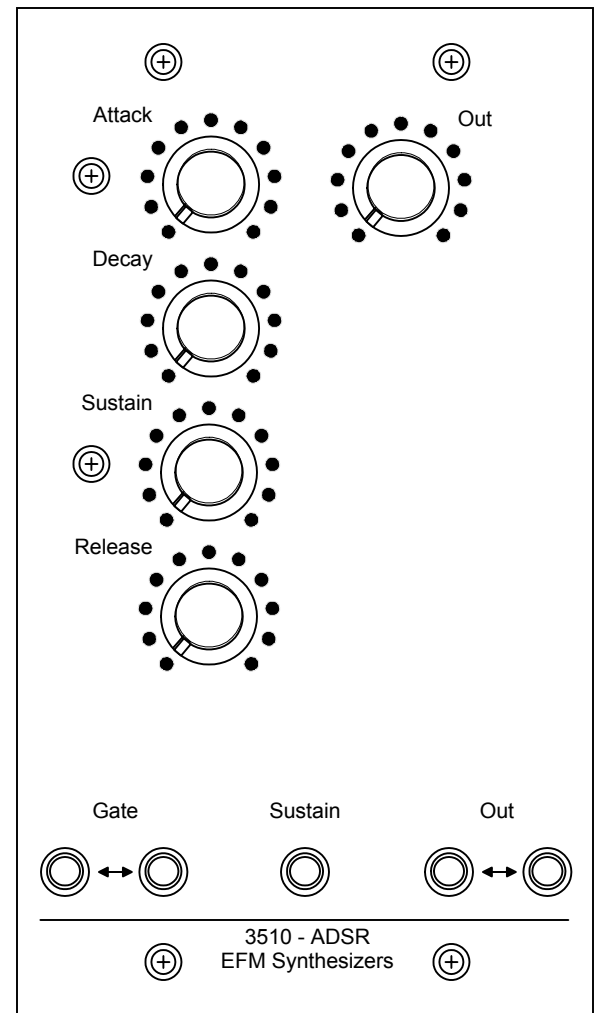
When the gate is removed. Q7 turns off. Q8 turns off and sets the 555s reset pin low.

Q5s bias voltage is switched to pin1/5 (release) and the ref voltage used to set the charge for C3 is switches to pin12/14 (ground) and C6 is discharged.

An attack, decay, sustain, release envelope develops on U2a pin1.
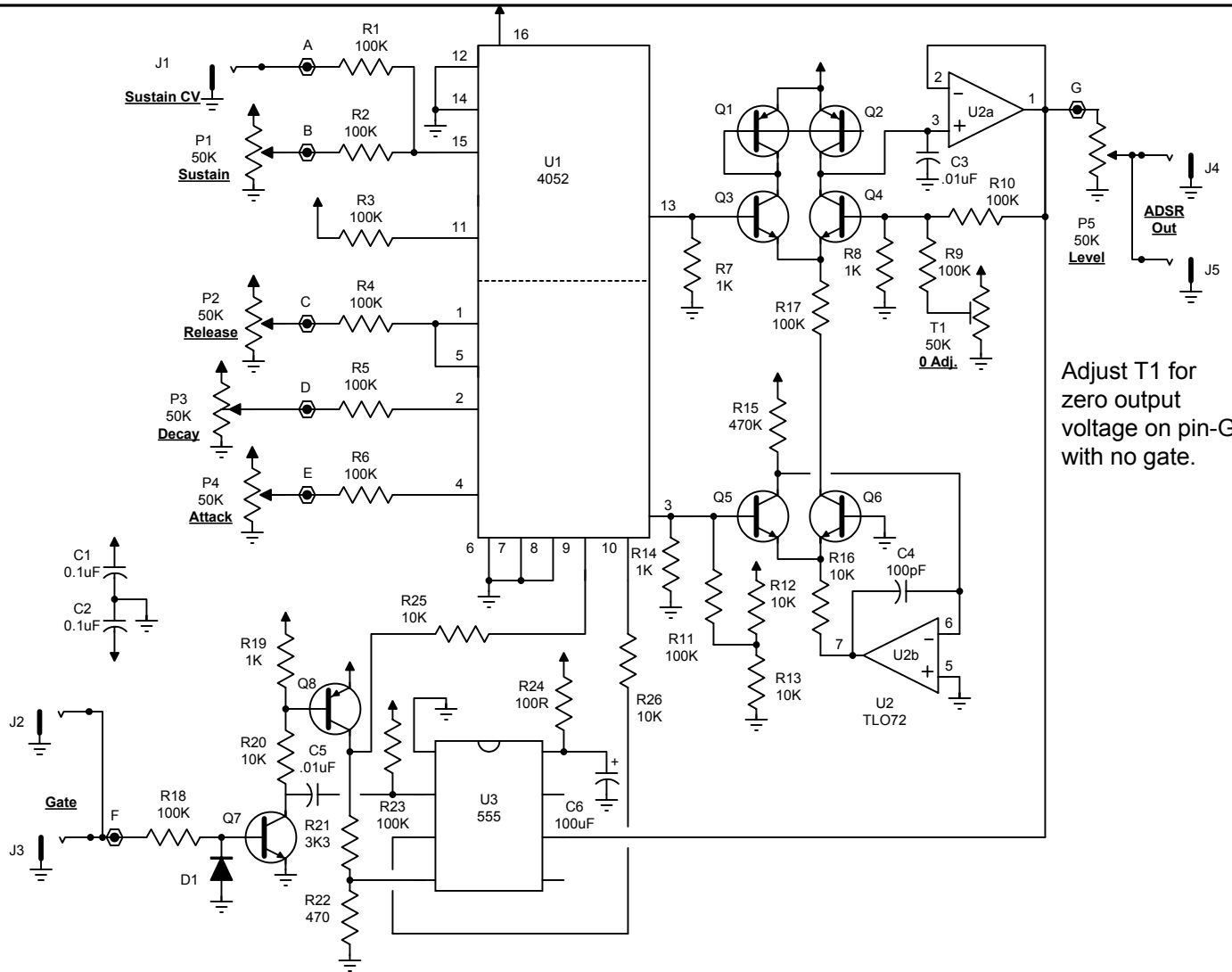
Adjust T1 for
zero output
voltage on pin-G
with no gate.

Small Kit

PCB	PC Board	1
C1,2	0.1uF Ceramic	2
C3,5	.01uF	2
C4	100pF	1
C6	100uF Ele	1
R1,2,3,4,5,6,9,10,11,17,18,23	100K	12
R7,8,114,19	1K	4
R12,11113,16,20,25,26	10K	8
R15	470K	1
R21	3K3	1
R22	470	1
r24	100	1
D1	1N4148	1
Q1,2,8	2N3906	3
Q3,4,5,6,7	2N3904	5
U1	4052	1
U2	TLO72	1
U3	555	1

Full Kit

P1,2,3,4,5	50K Pot	5
Knob		5
Jack	1/8"	5
L Bracket w/hardware		2
Header		1
Panel		1
Overlay		1

VCADSR

It's a little more expensive but the 3510 vcadsr is much more capable than the standard adsr. The 3508 has been a favorite through the years and we keep it around because it is a simple, useful, inexpensive circuit.

VCRADSR

Although not part of this kit it's easy to put the rate parameter back on. Simply remove R12 and 13 and connect a 50K voltage control pot to the loose end of R11. I even put a pad on the board.