Uglyface

The Uglyface is a circuit designed by Tim Escobedo. It takes the input signal from your instrument, amplifies it with a 386-type amplifier IC, and uses this to retrigger a free-running oscillator made with a 555 counter IC. In addition, the input signal's envelope can sweep the frequency of the oscillator. The end result is a buzzsaw synthy distortion, capable of octave effects and faux-resonant filter sounds.

Designed by Tim Escobedo:
http://folkurban.com/Site/GuitarEffects-681.html
http://www.jiggawoo.eclipse.co.uk/guitarhq/Circuitsnippets/snippets.html

Quantity - Part [notes]

ICs
1 - JRC 386D
1 - ICM 7555

[other versions of the 555 and 386 can work if you want to experiment, but these part numbers are confirmed to work properly]

Resistors
1 - 1m
1 - 1k
1 - 22k
1 - 470r
1 - 100k
1 - 4k7 [this resistor is the LED current limiting resistor - lower the value if using lower brightness LEDs, raise the value if the LED is too bright]

Potentiometers
2 - A100K
1 - B1k
1 - B10k

Capacitors
[capacitor dielectric types are just suggestions - if you want to use other types and you know what you're doing, feel free to experiment]

3 - 100N film
2 - 2.2uf electrolytic (AKA 2U2)
1 - 22uf electrolytic

Optocoupler
1 - VTL5C3 [NSL-32 is also confirmed to work - other opto types can generally be used if they have a similar light/dark resistance spread - check the datasheet if unsure]
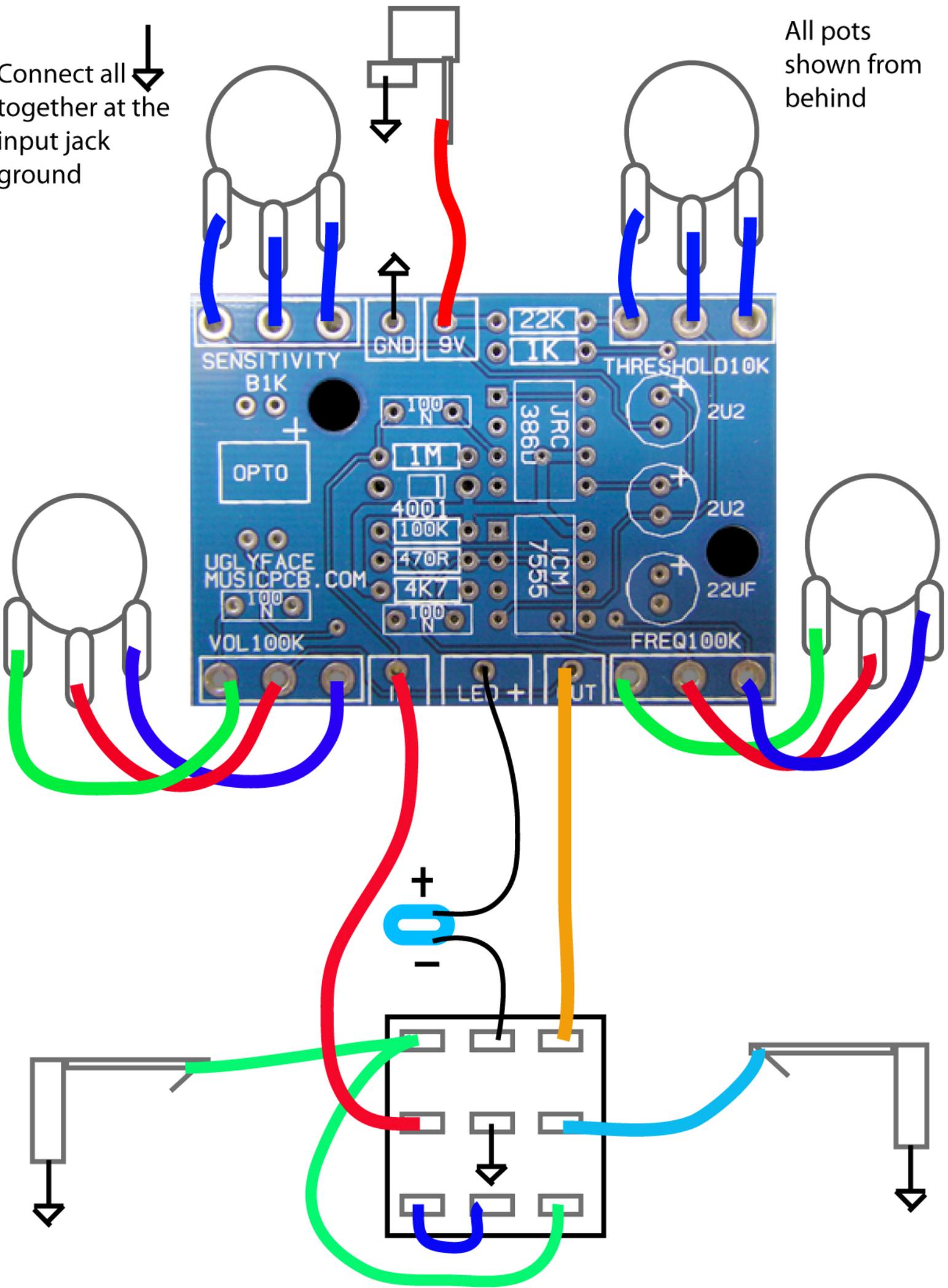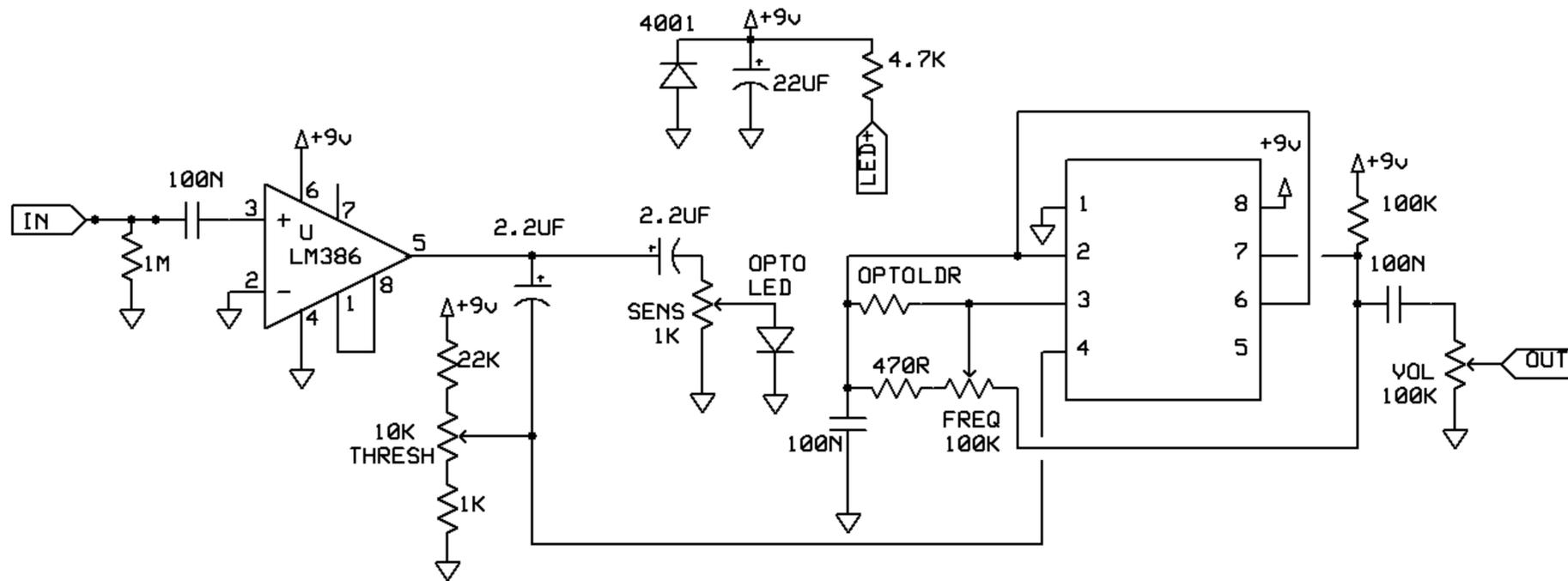
Diodes
1 - 1n4001
1 - LED

Connect all together at the input jack ground

All pots shown from behind

SENSITIVITY
B1K

GND   9V

22K
1K

JRC
386D

OPTO

100N

1M

4001

100K

470R

4K7

100N

UGLYFACE
MUSICPCB.COM

ICM
7555

VOL100K

LED +   UT

FREQ100K

THRESHOLD10K

2U2

2U2

22UF

+
−

IN

100N

+9v
6
7
U
LM386
+
5
2
−
4
1
8

1M

2.2UF

22K

10K
THRESH

1K

+9v

4001

+9v
22UF

4.7K

LED

2.2UF

SENS
1K

OPTO
LED

OPTOLDR

470R

100N

FREQ
100K

1
2
3
4

+9v

8
7
6
5

+9v
100K

100N

VOL
100K

OUT