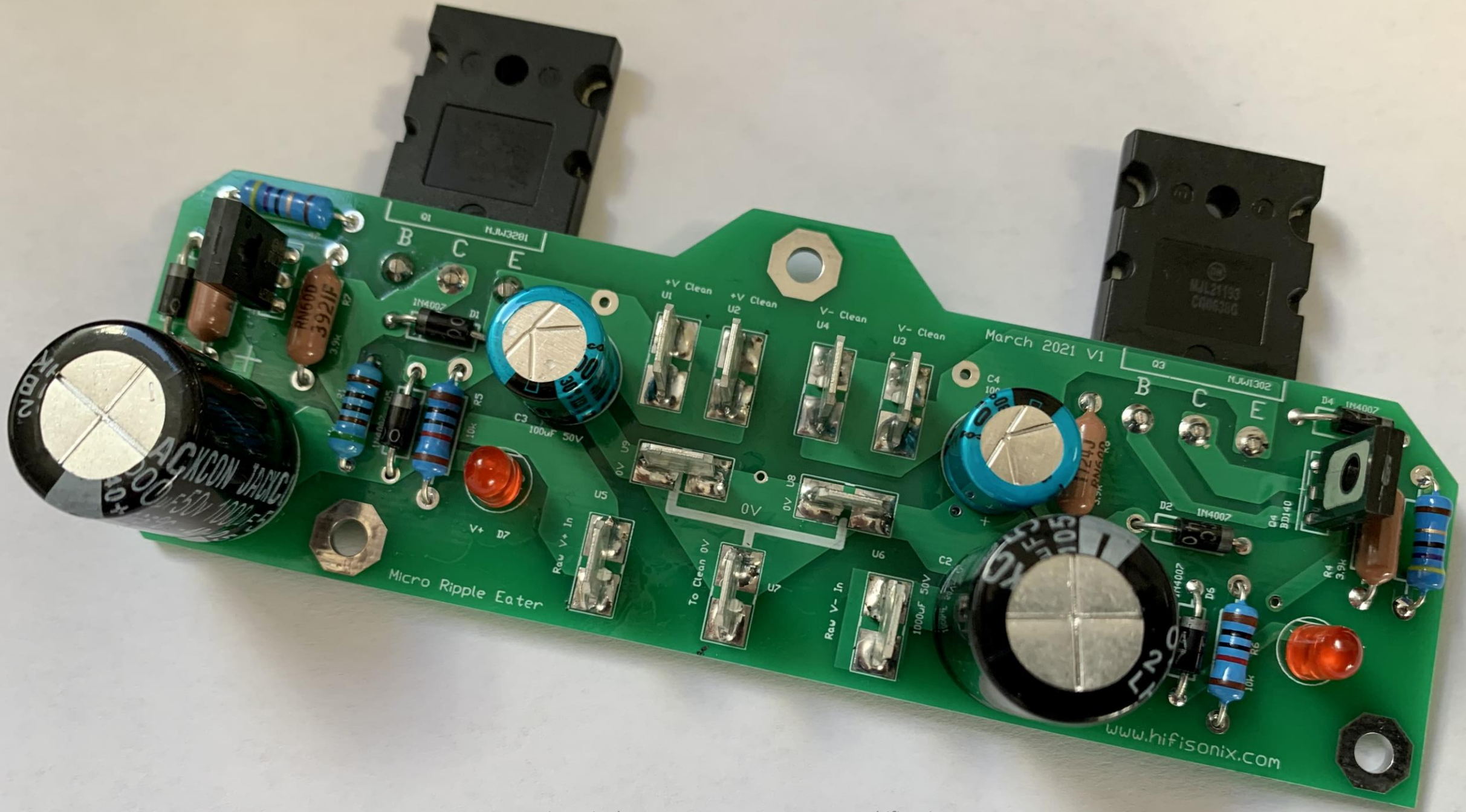
Hifisonix
Micro Ripple Eater
aka *MRE*

A 10A Per Rail Ripple Eater for General Audio Amplifier Use

- Cheap enough to be able to use 1 per channel
- Can be used with any linear power supply
- Up to +-50V (higher voltages will require some cap voltage changes)
- 10A per rail (Requires GOOD Heatsink at these current levels!)
- 40 dB ripple attenuation up to 1kHz; Better than 50 dB up to 10 kHz
- Low component count
- Reverse bias protection
- Slow start-up: ~10 seconds from 0V to full output voltage
- Small compact PCB – easy to mount in your amp chassis

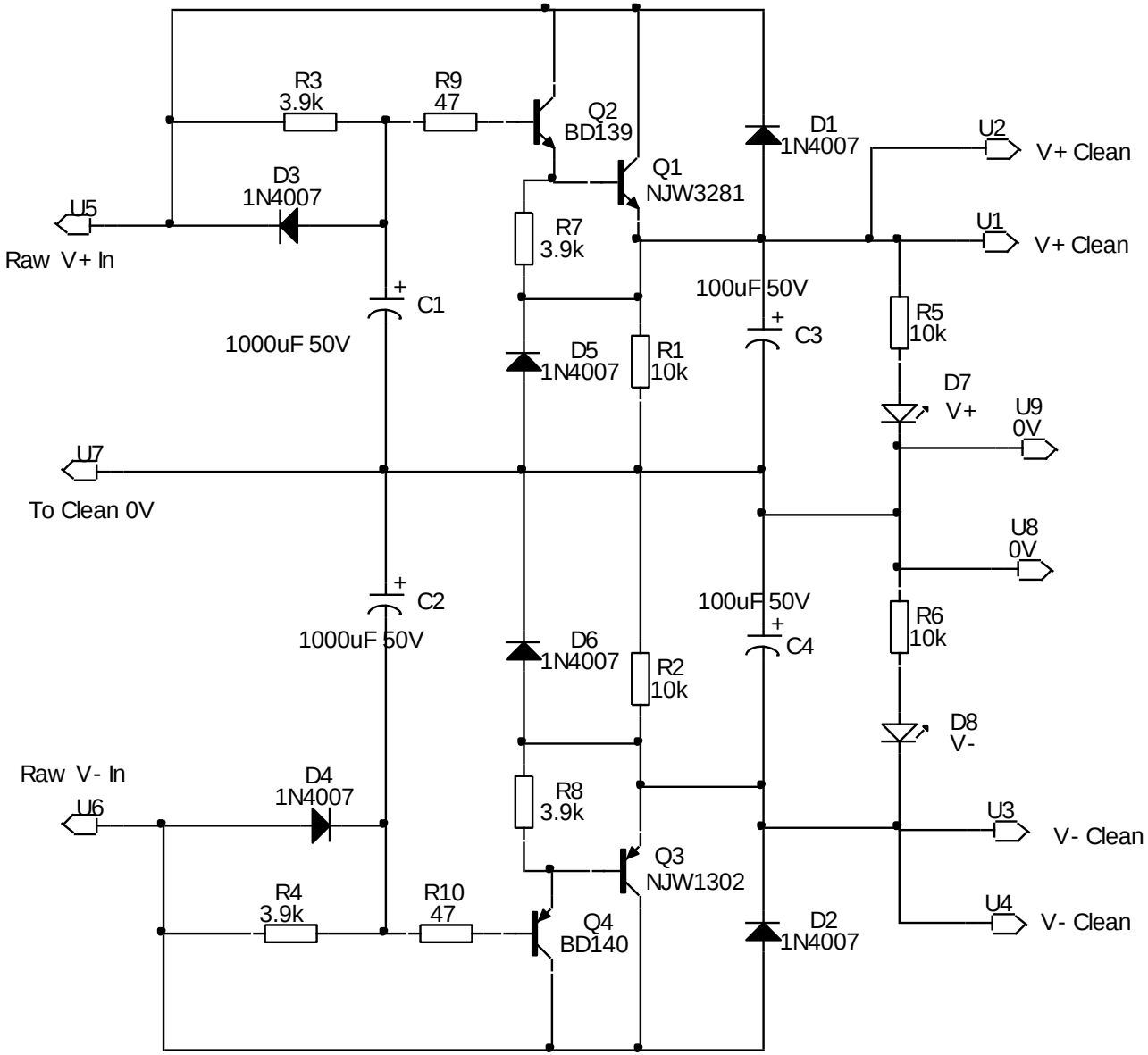
This PCB project uses all through hole components

A double sided, THP silk screened PCB for the Micro Ripple Eater is available here Micro ripple Eater PCB


Micro Ripple Eater
March 2021 V1
www.hifisonix.com
Q1 MJW3281
Q3 MJW1302
+V Clean
+V Clean
V- Clean
V- Clean
0V
Raw V+ In
Raw V- In
To Clean 0V
C3 100uF 50V
1000uF 50V
IN4007
BD140

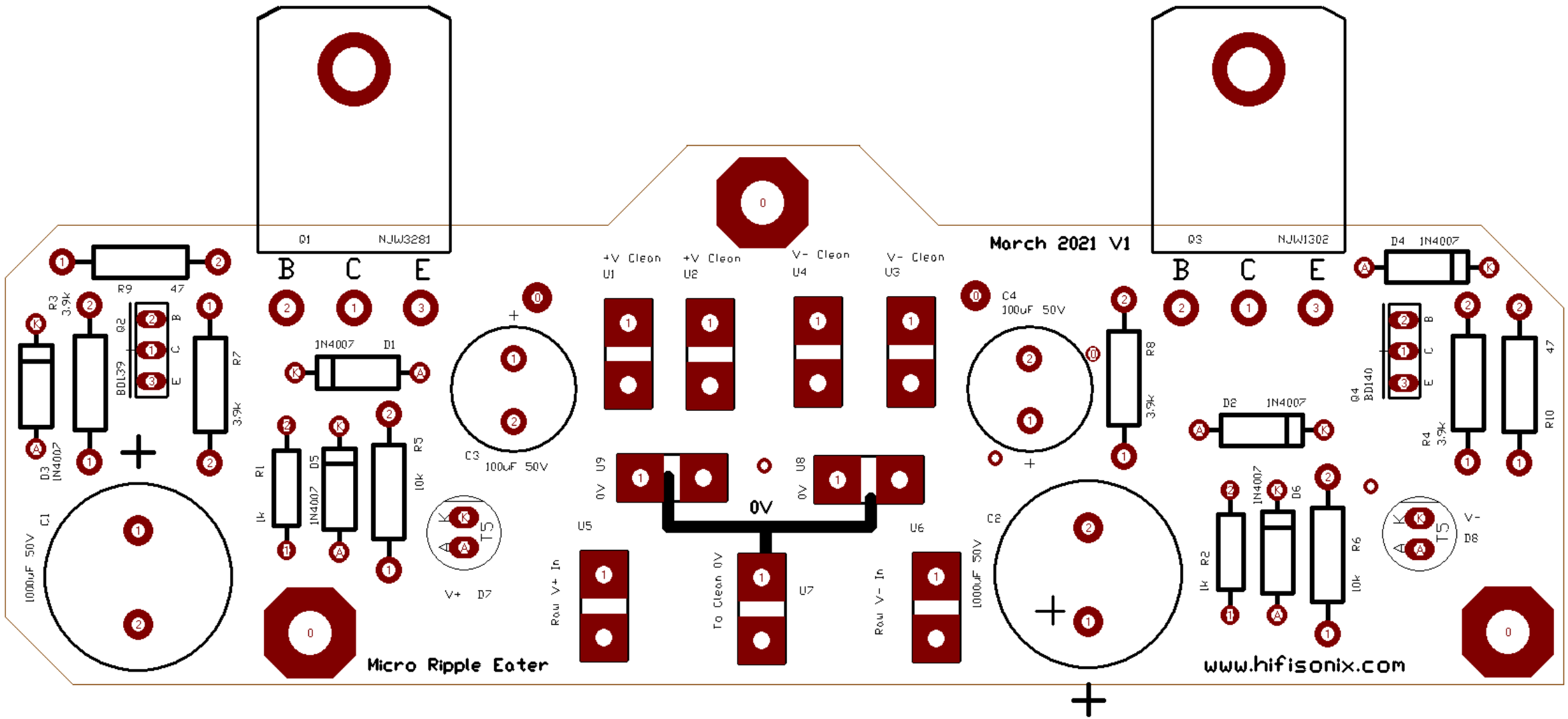
hifisonix Micro Ripple Eater aka MRE Schematic V1

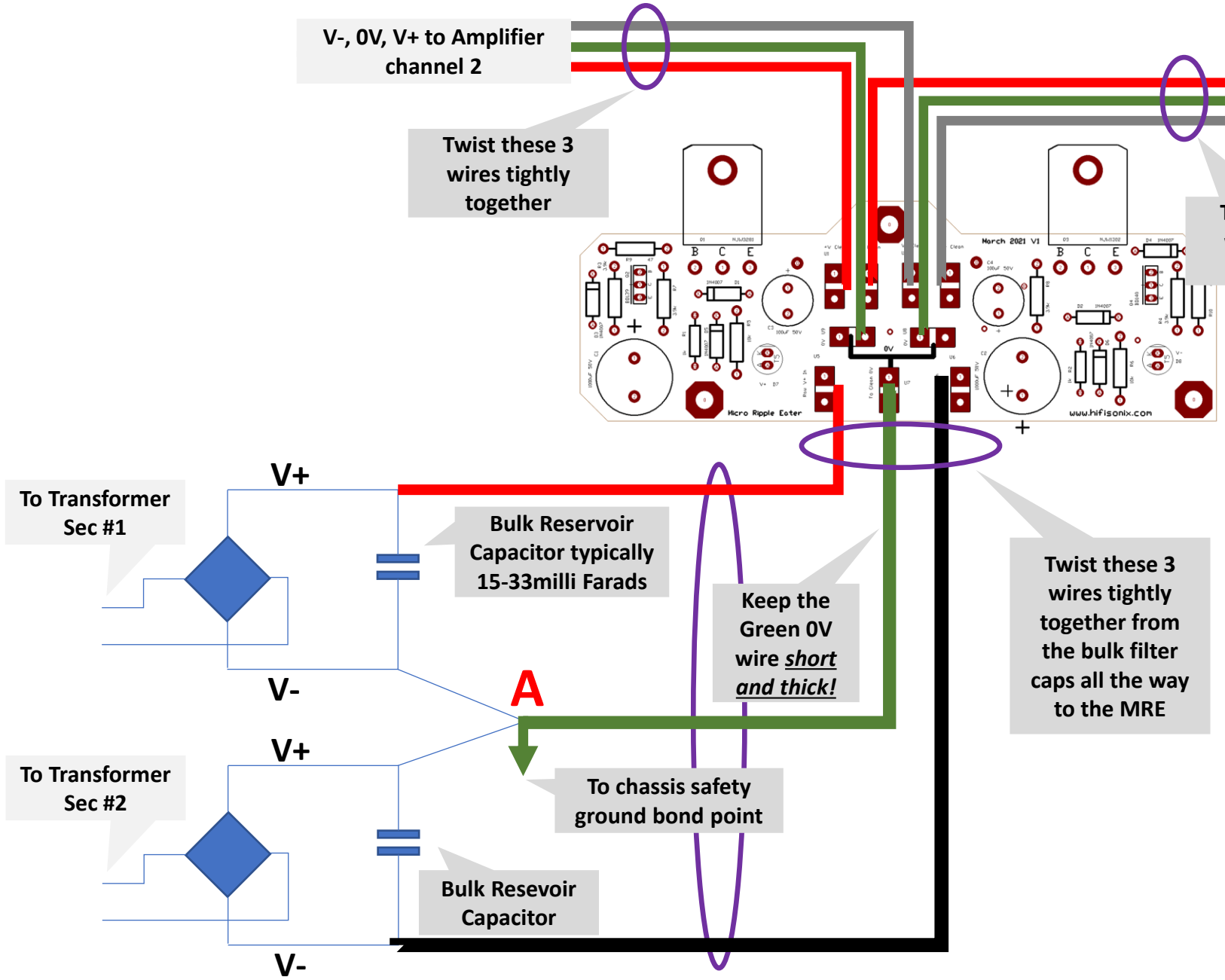
March 2021



Q1-Q4 are NOT critical – for Q1 and Q3 any high power TO3P or similar can be used. I used MJL21193/4 for my build. For Q1 and Q4, any TO126 devices with a suitable Vce rating can be used.

Hifisonix Micro Ripple Eater aka MRE PCB Layout March 2021 V1



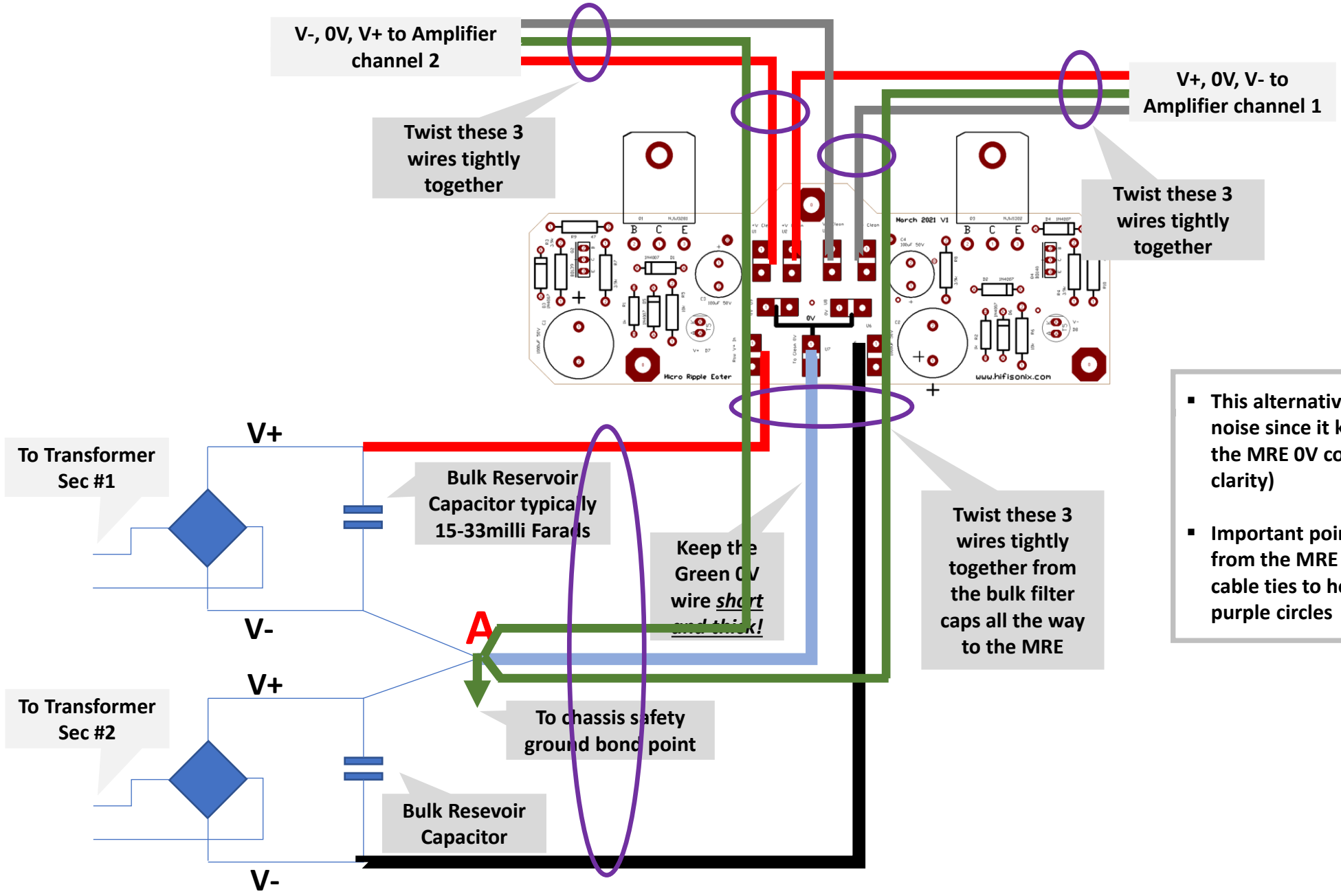


- Important point. Make sure ALL the wires to and from the MRE are tightly bundled together. Use cable ties to hold them in place indicated by the purple circles

- Keep All wires short and thick where possible
- Route the speaker return back to the amp module 0V

OR

- Route the speaker return back to the star ground by twisting it with the +, - and 0V from the MRE to the amplifier modules, go across the MRE and then twist it with the wires back to the Star Ground point marked A
- Make sure the MRE is mounted on a suitable heatsink. At full power on a 2 x 100 Watt class AB amp, it will dissipate 3 Watts per series pass device
- On a class A kx-amplifier with 1.2 amps per channel, the dissipation will be 7~8 Watts in total
- Each series pass device (Q1 and Q3) will drop 1~2 V depending upon load current



- This alternative wiring scheme might offer loer noise since it keeps the high return currents OFF the MRE 0V connection (shown in BLUE for clarity)
- Important point. Make sure ALL the wires to and from the MRE are tightly bundled together. Use cable ties to hold them in place indicated by the purple circles


B
C
E
D2
1N4007
Q4
BD140
R4
3.9k
R2
1k
D6
R6
10k
D8
V-
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