



iRobot Roomba 800 Clicking noise when docked FIX

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TOOLS:

Soldering Iron 60w Hakko 503F (1)

Lead-Free Solder (1)

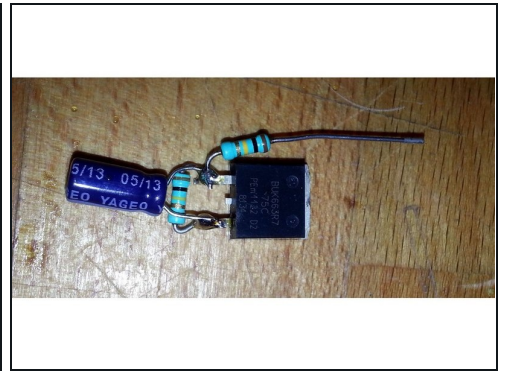
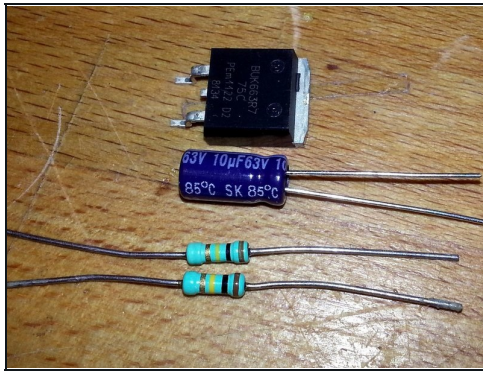
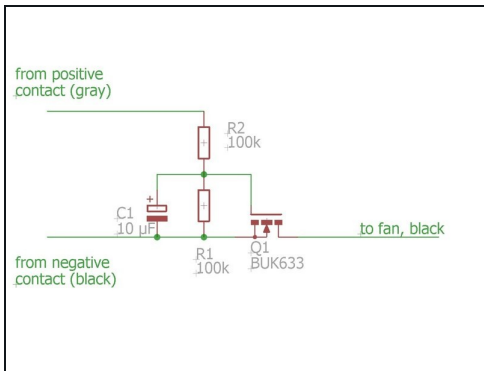
Heat Shrink Tubing Assortment (1)

Step 1 — Check if this fix will help you



- First check, if this fix applies to you: Remove the vacuum bin and listen if the clicking noise has vanished. If so, this fix will help you
- The source of the clicking noise are voltage spikes (1-2 milliseconds duration) which are sent to the vacuum bin motor, giving it a short, hearable kick. We will add a soft-start functionality to the vacuum bin motor such that those spikes will have no effect.

Step 2 — Soldering soft-start circuit



- Parts you need:
- one n-FET (I used BUK663) but any n-FET with a voltage rating $> 20V$, a current rating $> 10A$ and a gate-source threshold voltage $V_{gs} < 5V$ should work
- Two 100kOhm resistors
- one 10 μ F/25V capacitor (careful, has positive and negative side!)
- Solder everything together according to the schematic

Step 3 — Open Vacuum Bin



- Open the lid of the vacuum bin by removing the four silver screws and carefully remove the lid

Step 4 — Add Soft-Start circuit



- Cut the black wire and insert the circuit. Do not forget some large shrinking tube to cover the whole circuit later (not pictured)
- Add a wire between the gray-wired connection tab and the resistor R2 (white wire in the picture). Add some shrinking tube to the resistor to prevent short-circuits.
- **WARNING:** Do not solder the wires when the connection tabs are in the plastic holder - the plastic will melt. Remove the contacts from the plastic before soldering
- Shrink tube over the whole circuit.

Step 5 — Assemble



- You can test the circuit with a 12V or 9V battery/voltage supply. Positive voltage is the grey-cabled tab, negative the black-cabled one. The motor should start with a short delay (1s or so)
 - Reassemble vacuum bin and enjoy the silence.
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To reassemble your device, follow these instructions in reverse order.