

# Resistive Touch Switch Troubleshooting Guide

The Resistive Touch Switch Troubleshooting Guide covers troubleshooting and repair of the Resistive Touch Switch (<https://www.makersmakingchange.com/project/resistive-touch-switch/>). The most common failures are likely to include transistors placed in backwards, incorrect resistor values, missing or bridged solder joints.

## Tools needed for testing:

- Screwdriver
- Multimeter

## Tools needed for repair:

- Wire cutters
- Soldering iron
- Solder
- Soldering pump
- Two alligator clip jumper wires

## Testing the Resistive Touch Switch

Set the multimeter to the 20 volt range. Hook up one alligator jumper to each lead of the multimeter. Test the multimeter by touching the remaining alligator clip ends together. If all is working properly you should hear a beep. On some meters you may only see a visual indication.

## Main troubleshooting

### Checking for cracked or “dry” solder joints and/or missing joints

Examine the solder joints. Proper solder joints should be smooth and shiny, and should not appear dull or cracked. If a solder joint appears substandard, reheat the solder joint, and use the solder pump to suction away as much of the existing solder as possible. Apply fresh solder to the joint. As a final check, inspect the PCB to make sure that solder is applied to all solder pads on the circuit board. There should be no visible pins protruding through the circuit board which aren't soldered in place.

### Checking for proper battery power

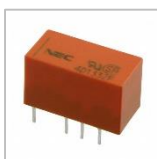
Set the multimeter to the 20 V Range. On the PCB, attach the negative lead of the tester to the left side of capacitor C2. Attach the positive lead of the tester to the bottom of switch S1. This is the switch pin that's furthest from the LED. You should be able to measure a voltage of between five and six volts on your meter.

### Checking touch pad for shorts.



Set your multimeter to its highest resistance measurement range. Attach the positive multimeter wire to the first terminal of the resistive switch touch pad. Attach the negative multimeter wire to the second terminal of the resistive switch. The resistive switch should show no reading, AKA open circuit.

### Checking the Relay



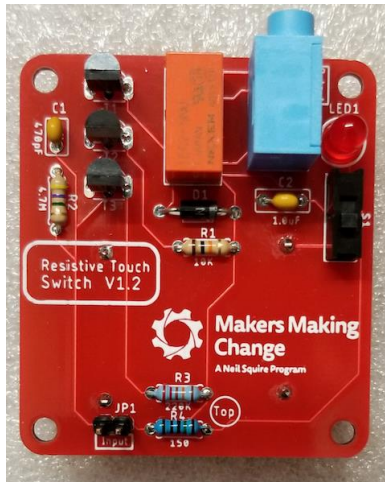
With the Resistive Touch Switch turned on, use a jumper wire, and short the two outermost pins of transistor T1 (emitter to collector). The relay should click and LED1 should turn on. Replace the relay if it doesn't click. The relay should click and LED1 should turn on.

### Checking the Transistors (type NPN #2N3904)



With the Resistive Touch Switch turned on, short the two outermost pins of transistor T2 and T1 in succession. Each time the relay should click. If the relay doesn't click, replace the NEXT transistor closer to the blue connector edge of the board. To test transistor T3, short connector JP1 at the bottom of the board. The relay should click if the other transistors are ok. If it doesn't click replace transistor T3.

### Printed Circuit Board (PCB):



### Schematic Diagramn:

