

INSTRUCTIONS FOR MODIFYING THE KIWI-OSD TO REPAIR THE TRANSISTOR ISSUE

These instructions are for those KIWI-OSD owners who wish to make the transistor modifications themselves.

These instructions will cover two possible repair paths:

- Reversing the transistors that are currently in the OSD.
- Installing new transistors that are provided by PFD Systems.

The first option is more difficult and the latter, although easier will require you to wait till PFD Systems can ship you the replacement transistors.

The instructions are mostly pictorial with terse dialog. The steps are pretty straight forward, especially for those who are experienced with assembling electrical circuits.

Some Dos and Don'ts.

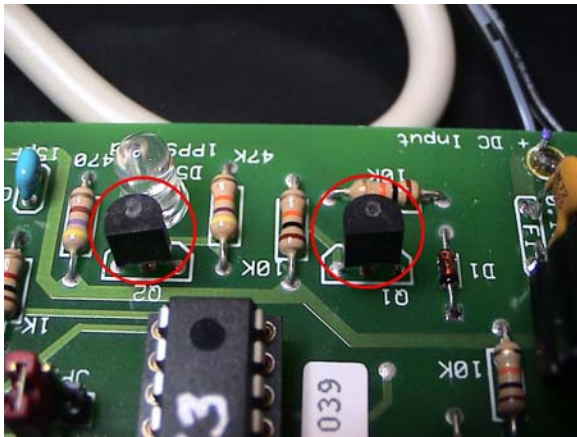
- Do try to avoid static. The components in the OSD are sensitive to static.
- Do not use a soldering gun; use a soldering pencil instead.
- Do not use too much solder; the excess can cause short circuits.
- Do ask questions if you are not sure. Email is best.
- Don't worry if you destroy the existing transistors, we can send you more or you can send the OSD for repair.

Step by Step Instructions

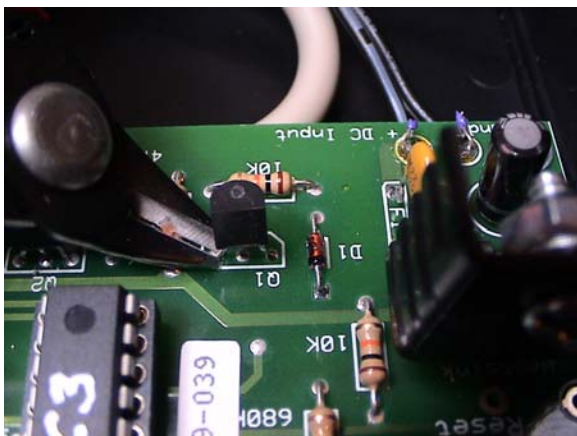
The first part of the instructions applies to both upgrade paths. The instructions diverge when specific to on or another. Both upgrade paths begin here.



Remove the 4 screws from the cover of the OSD and reserve them along with the white hole cover.



Identify the two transistors on the printed circuit board



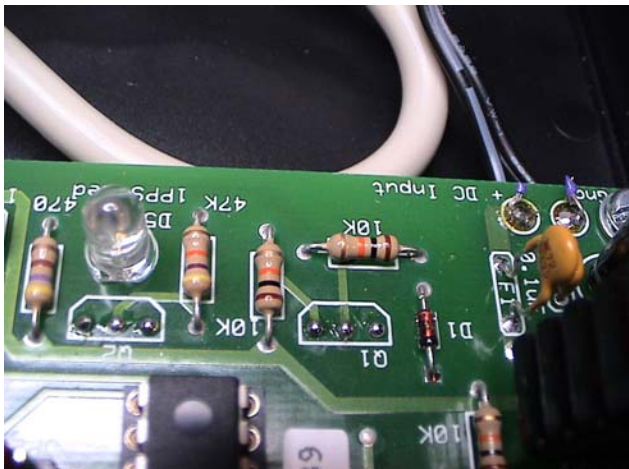
Using fine tipped cutters, snip off the 3 leads of each transistor as close as possible to the printed circuit board. Diagonal cutters might not be able to cut the leads as close as needed to insure there is enough length left on the transistors to resolder them in place.



Here is the printed circuit board after the transistors have been cut off.



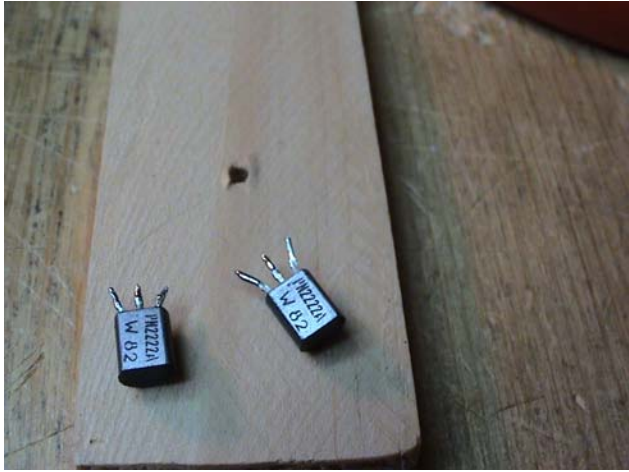
Here are the transistors after they are cut off. Notice how short the leads are.



Apply a tiny drop of solder on each of the three landing pads for each transistor on the printed circuit board. This will insure there is amply solder to reattach the transistors.

IF YOU ARE GOING TO ATTACH NEW REPLACEMENT TRANSISTORS, SKIP TO THE SECTION BELOW.

Resoldering the original transistors



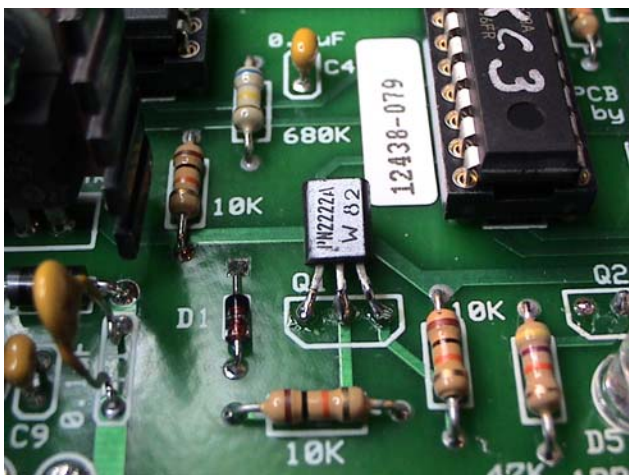
Spread the leads slightly and apply solder to each of them. NOTE: not all the transistors in the various models of the OSD will look the same. The examples shown on the left are from the 44-XXXX series of OSD.



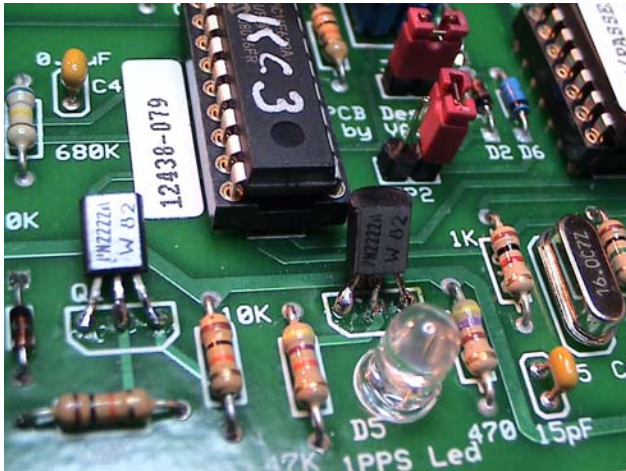
Hold the transistor in place with a pair of small needle nose pliers or, if your fingers are small enough, but don't burn yourself!

REMEMBER: you must solder the original transistors in BACKWARDS from the way they were originally. If you are unsure which way they should be placed, refer to the photo of the original layout.

Apply the soldering iron to each lead till the lead and solder join.



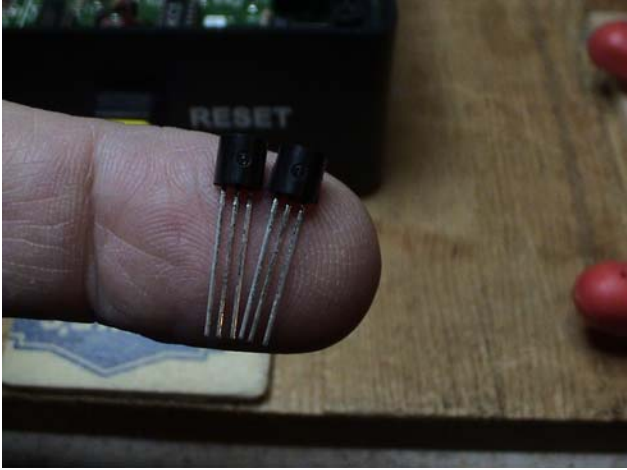
Here is how a transistor will look once it is resoldered in place. It doesn't have to look pretty; as long as there is good solder flow over each lead, that is good enough.



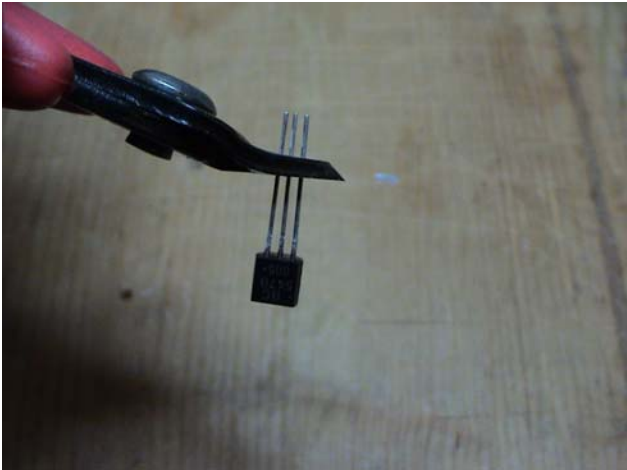
Solder in the second transistor. You will have less room to work with around the transistor closest to the clear LED, so be careful not to melt any of the other components.

This completes the modification. Skip to the section below, “Testing the OSD”.

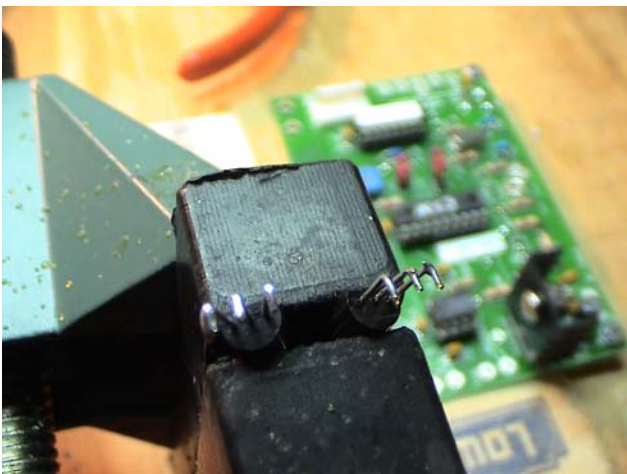
Installing the new transistors



Here are the new replacement transistors.

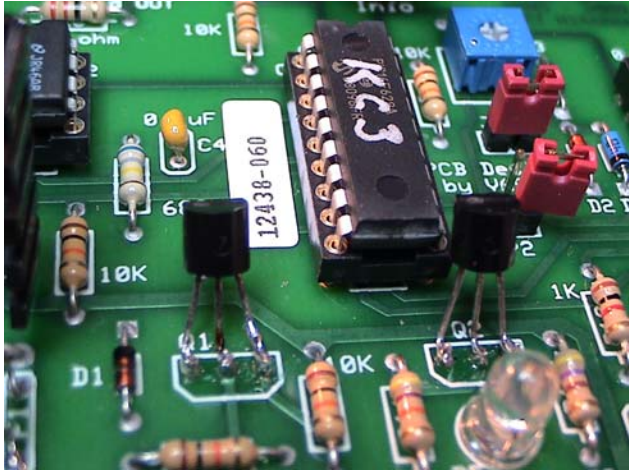


Cut off about a third of the leads on each transistor.



Bend the leads slightly and “tin” the leads with some solder. It is important that you do this step to insure the solder will flow easily when you attach the transistors to the printed circuit board. You should bend the leads toward the “bulging” side of the transistor. This will make it easier to install on the printed circuit board.

Adjust the width of the leads so that they are centered over the pads on the printed circuit board. This will make it easier to solder them onto each pad.



Solder each transistor in place.

IMPORTANT: the replacement transistors **MUST BE** installed the same way as the originals, that is, the direction they are installed should match the white silk screen drawing on the printed circuit board. **DO NOT** install these transistors “backwards” or you will have the same problem as you started out with.

The above photo shows how the transistors will look once they are soldered into place. The longer leads make it easier to work in tight places.

This completes the modification. Skip to the section below, “Testing the OSD”.

Once the OSD tests successfully, replace the white hole cover and attach the lids using the original 4 screws.

Testing the modified OSD

Once the two transistors are soldered back in place, it is time to test the modifications. Leave the cover off the unit until you are satisfied the modifications were done correctly.

Test the unit using the following steps:

1. Attach the video source to the CAM connection on the OSD.
2. Attach the video monitoring device to the REC connection on the OSD.
3. Insure that the video signal is present on the monitor.
4. Apply power to the OSD. After you do, the red LED should glow BRIGHTLY. This is one way to know that the transistor near the LED was installed correctly. The OSD will display “KIWI OSD V3 FIX WAIT” and then switch to say “RS232 OR 1PPS ABSENT”.
5. Attach the GPS to the OSD. You may have to position the GPS near a window in order that the GPS has a clear view of the sky. The OSD will again display “KIWI OSD V3 FIX WAIT”
6. The red LED should turn off awaiting the 1PPS signal from the GPS.
7. Wait. The GPS must get a fix before the OSD will begin it timing run. Once the GPS has established a fix with the satellites, the red LED will begin flashing. Soon the OSD will begin its timing run.

This concludes the test procedure.

Troubleshooting

If the red LED does not illuminate in step 4, then the transistor located closest to the LED on the printed circuit board might not be installed correctly. Likewise, if the OSD still doesn't begin its timing run even if the red LED is blinking, the transistor furthest from the LED on the printed circuit board might not be installed correctly. Check your soldering efforts and test again.

If you unable to get the OSD working, please contact PFD Systems and arrange for it to be returned. We will repair it here.

Contact Information

PFD Systems, LLC
5900 Ruyard Dr
Bethesda, MD 20814

301 518-4326
pfd@pfdsystems.com