Solder Instructions for MLT LMT70 Small Probe Board

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Contents

Revision History

Revision	Date	Author(s)	Description
1.0	07-11-2016	Mark Wolf	Initial Release

1 Introduction

The MLT LMT70 Small Probe Board is a very small temperature sensor board based on TI's LMT70 analog output high accuracy high precision temperature sensor. It is designed among others for very small dimensions.

Because of it's small size, measuring just 115 x 85 mil (2.9 x 2.16 mm), it is quite challenging to solder wires on it.

Beside the normal approach to solder wires simply 90 degree to the board surface in trough hole fashion, I want to show users another approach how to archive good results.
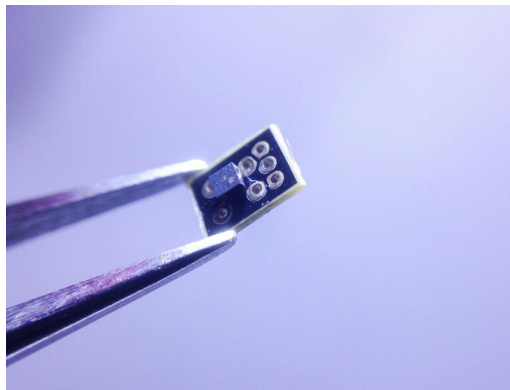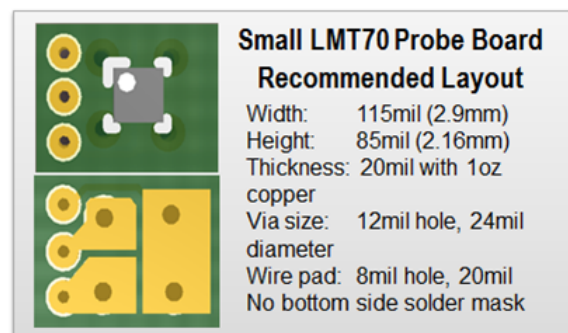

Figure 1: MLT LMT70 Small Probe Board

Figure 2: Dimensions

2 Solder Instructions

Here is how to get good results when connecting wires to the board.

The holes measuring just 8 mil (0.2032 mm), I have used CNC Tech Magnet Wire 600232, which is AWG32. Available at Digikey, Part number 1175-1692-ND. Feel free to use any other wire which fits you needs.

You should use an bench magnifier lamp for this job. If you own an binocular microscope, this would be even better.

Here are the steps how to proceed:

- Cut the wires to the length you need.

- Remove approx. 7-10mm of insulation carefully, make sure to not damage the copper core. I have used a scalpel for that, other techniques probably also lead to good results.

- Feed the wires trough the holes and bend them over the edges 180 °.

- Twist the wires gently around 2-3 turns with flat tweezers, so they become tight with the board. The result is seen in Figure 3 and 4.

- Cut the wires which are over at one end after twisting.

- Setup as in the Figure 5, a small drilling machine vice will do the job to hold the board. The wire ends are fixed with electrical tape on the bench. Define the angle you need for the wires.

- Solder them on with a fine solder iron tip. I have applied some extra flux before soldering.

- Clean with alcohol or flux remover as usually.

- Congratulation, Done!

Figures 7-10 show the results after soldering and after cleaning respectively.
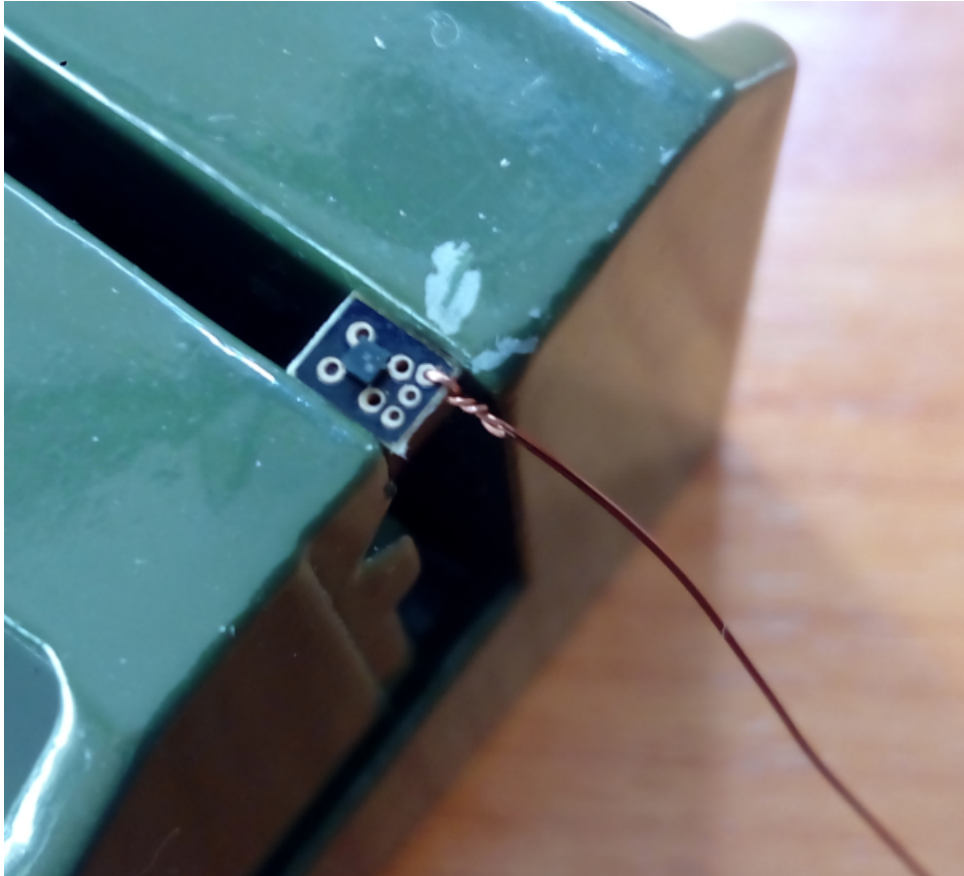
3 Pictures

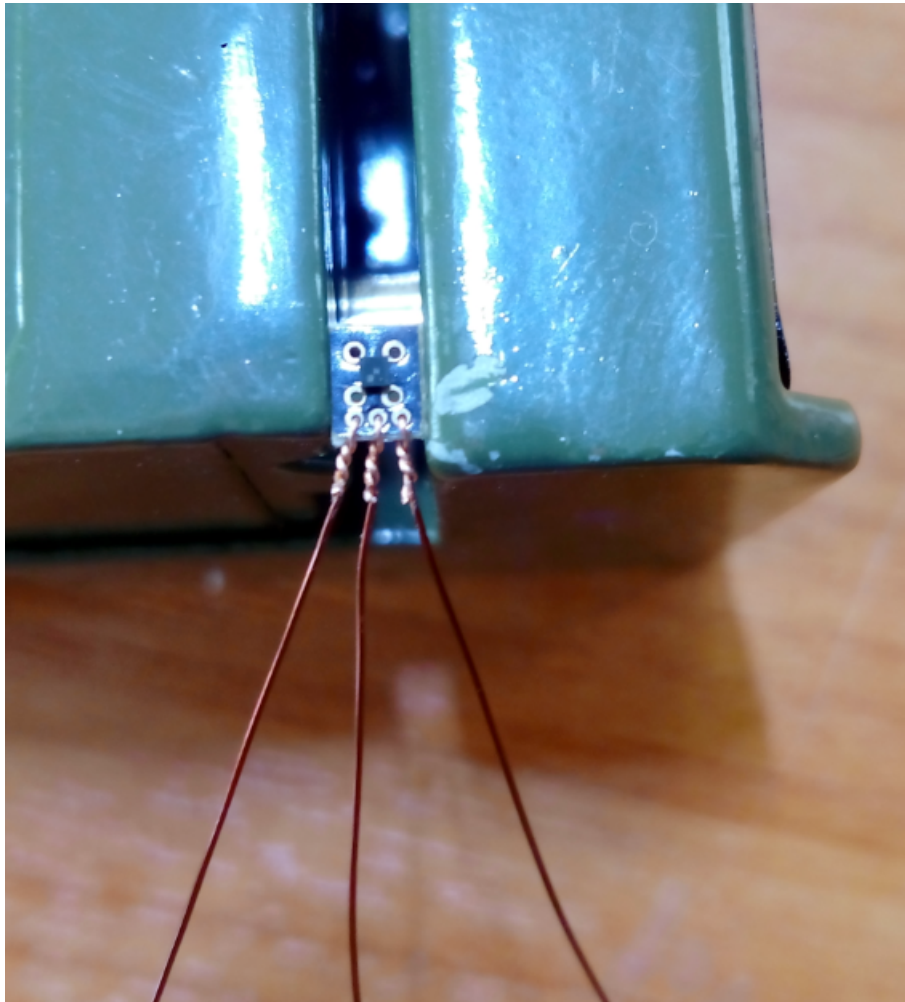Figure 3: 1 wire prepared for soldering
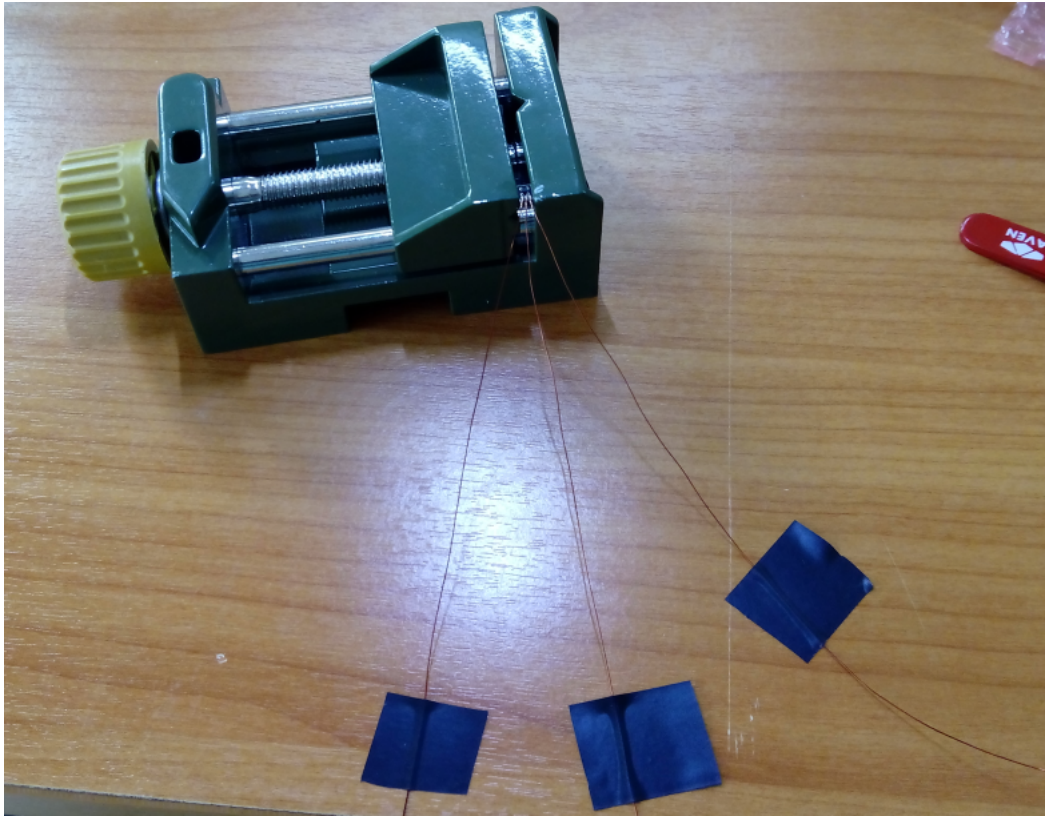
Figure 4: 3 wires prepared for soldering

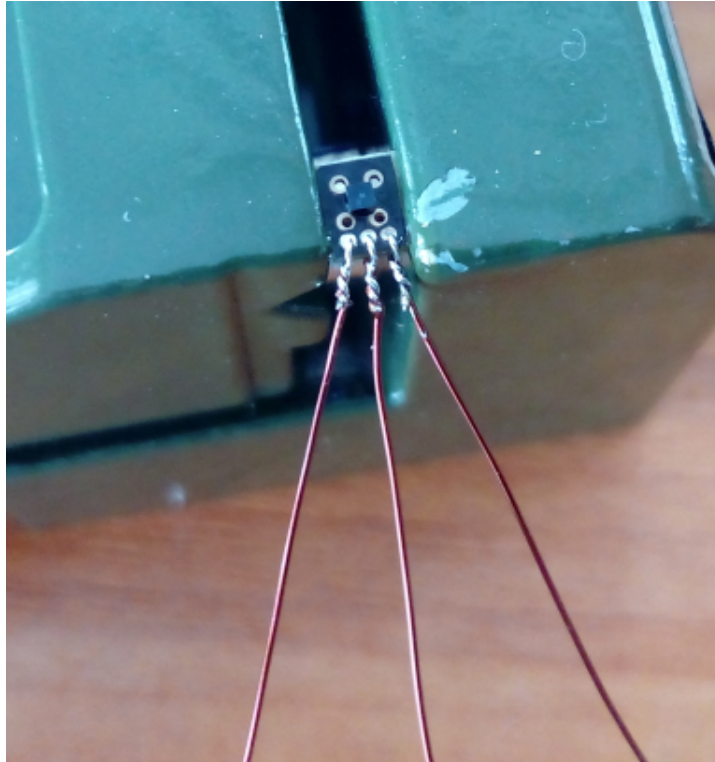Figure 5: Bench setup before soldering

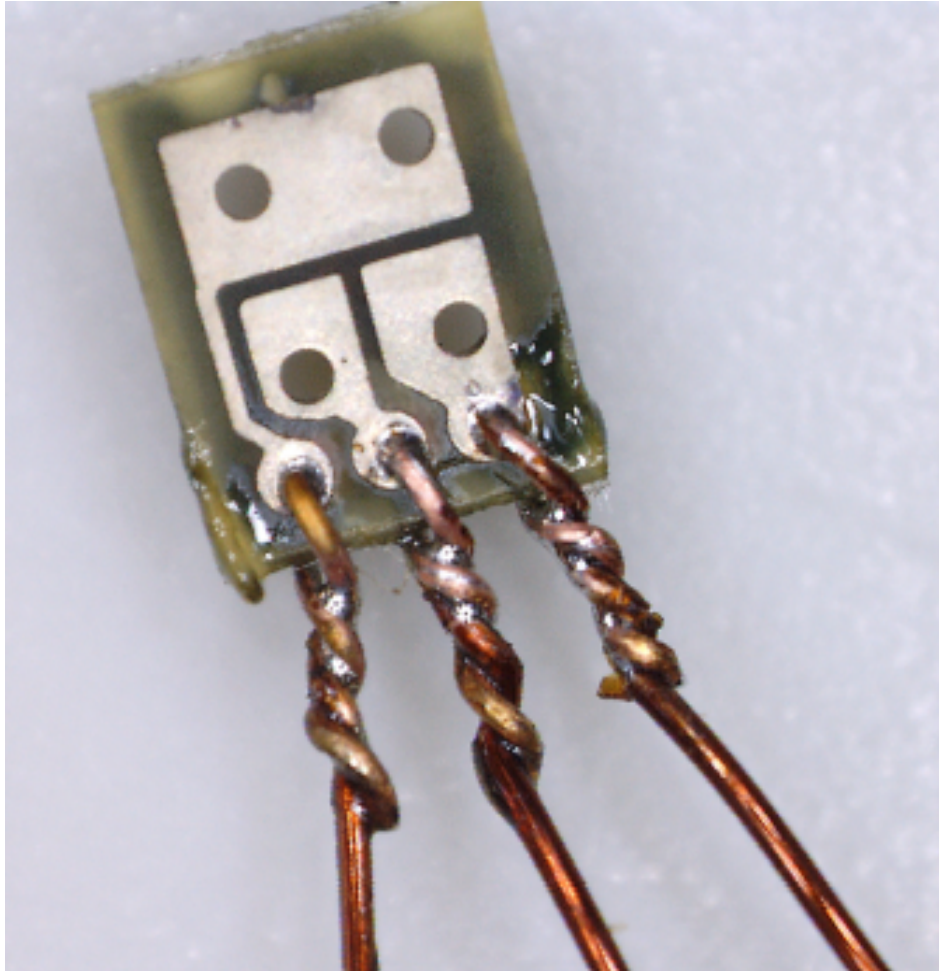Figure 6: Bench setup after soldering
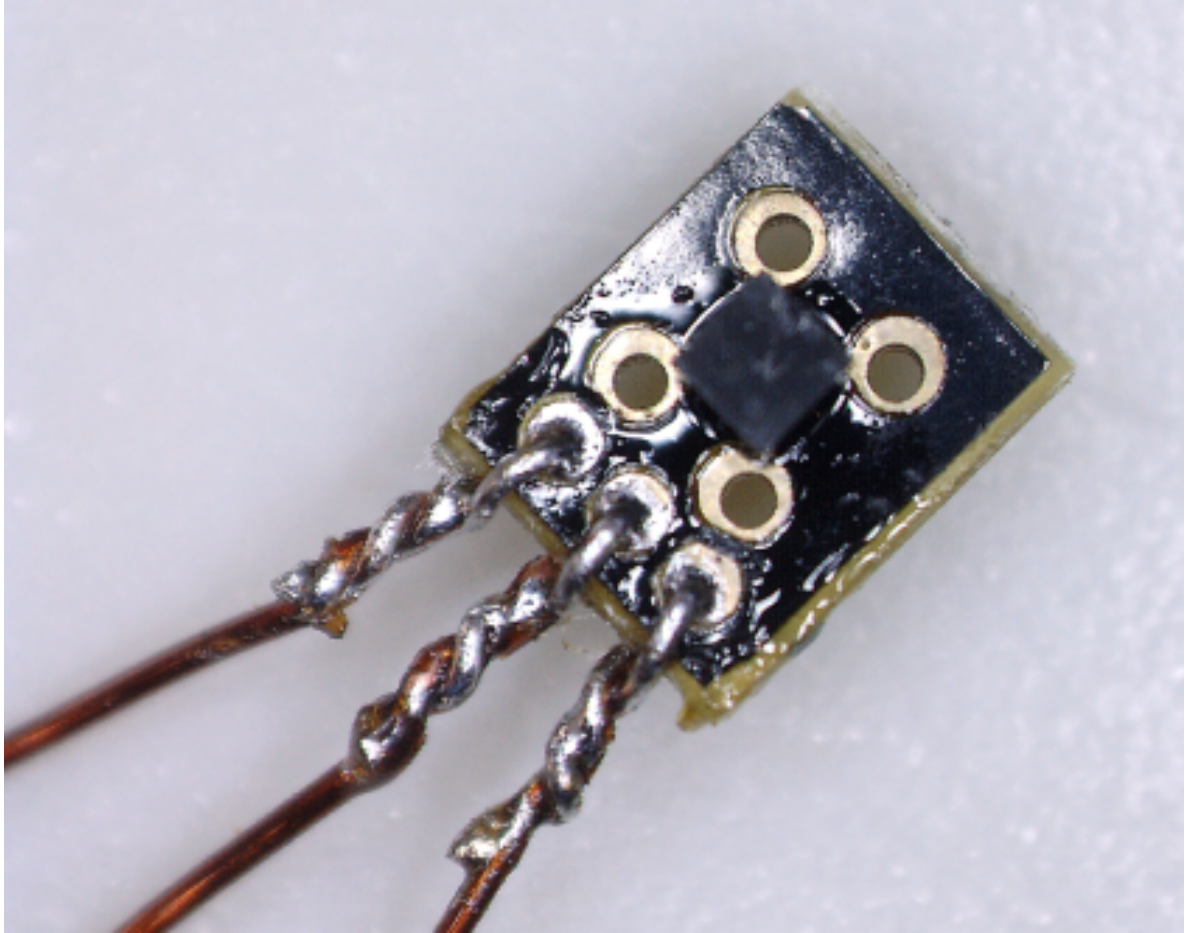
Figure 7: Bottom side view after soldering

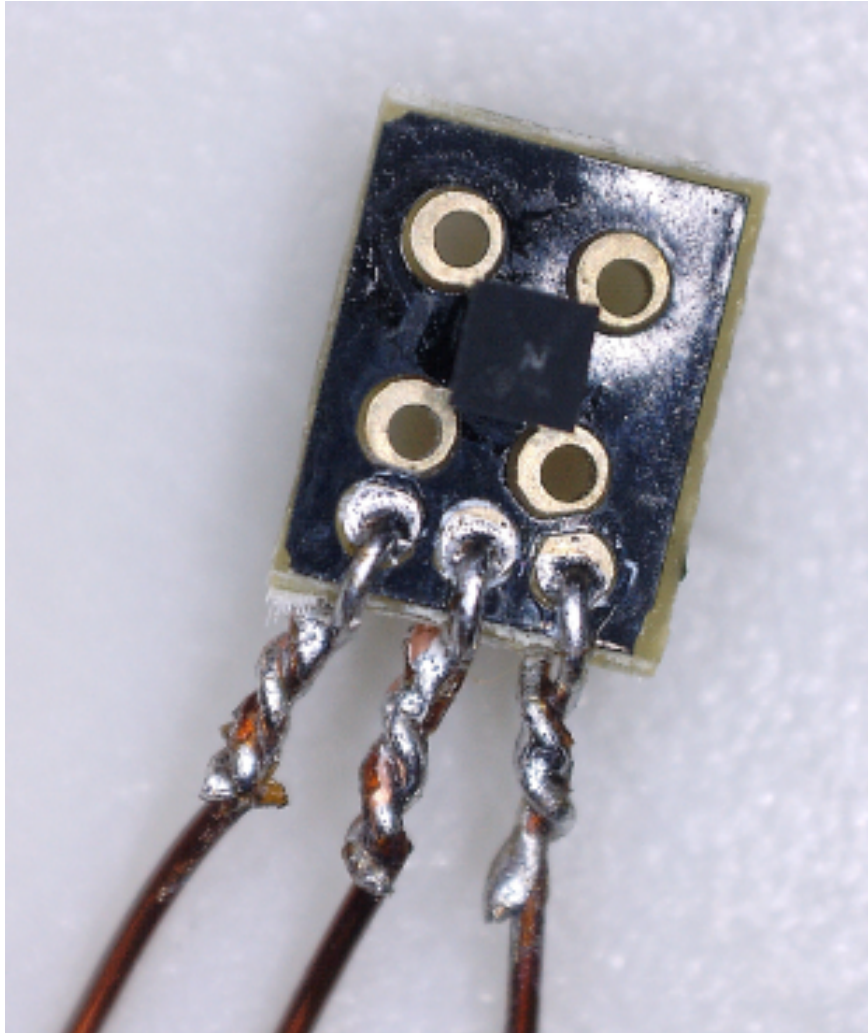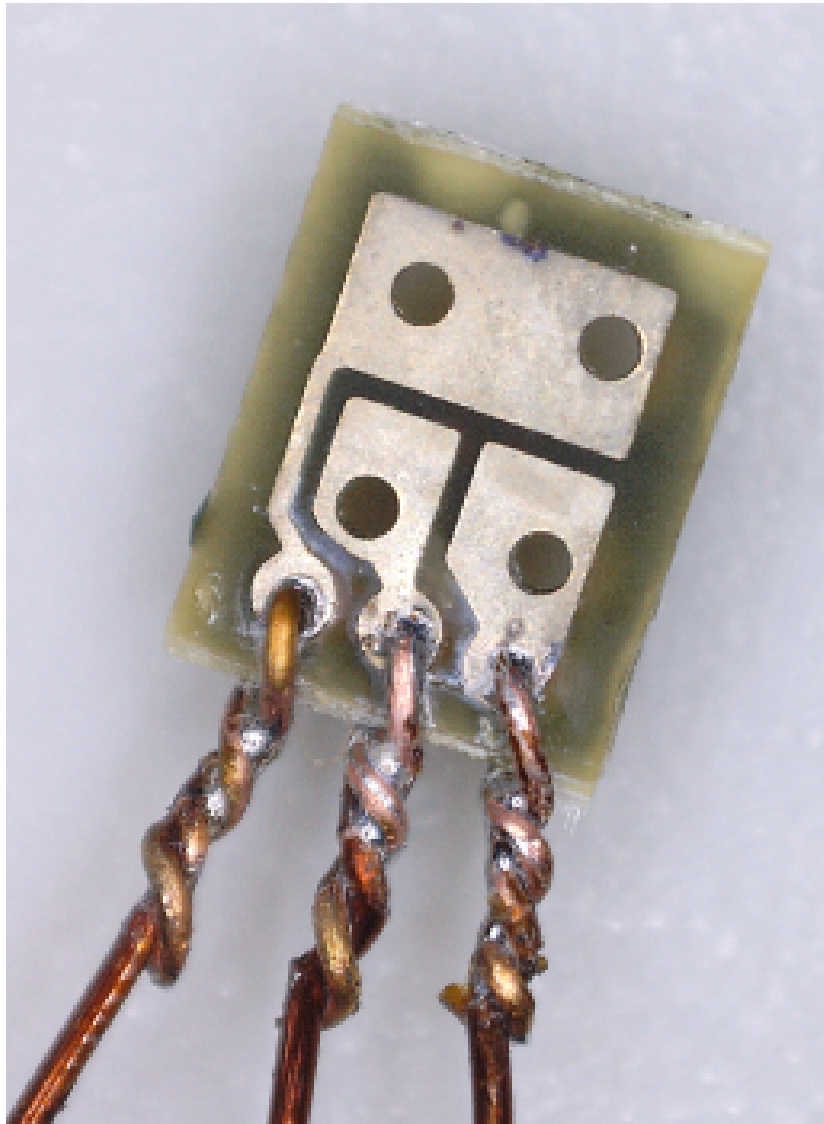Figure 8: Top side view after soldering

Figure 9: Top side view after cleaning

Figure 10: Bottom side view after cleaning