



Ubiquiti UniFi AP AC Lite TVS Diode Replacement

Repair an Ubiquiti UniFi AP AC Lite which is exhibiting a power fault problem: AP does not power on, and PoE Injector is blinking white.

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INTRODUCTION

This guide outlines steps needed to repair an Ubiquiti Unifi AP AC Lite (model UAP-AC-LITE) access point which **does not power on**, and is identified by the PoE injector having a power fault (blinking white on the PoE injector).

In some cases, affected units' center LEDs may flash dimly when the reset button is held pressed in with the POE power in place. This may only be visible if the board is out of it's chassis.

The UAP-AC-LITE contains an over-voltage protection circuit driven by a unidirectional TVS diode. While this diode is not a fuse, it's expected failure mode is to short, and divert power away from the rest of the board. This short is also detected by the PoE injector, which causes it to not deliver power.

In this guide will show how to:

1. Disassemble the UAP-AC-LITE
2. Test if the over voltage protection TVS diode has failed
3. Remove and replace the broken diode



TOOLS:

- [Jimmy](#) (1)

Standard plastic prying tools may not be sufficient. A Jimmy or comparable is highly recommended.

- [iFixit Opening Tools](#) (1)
- [Multimeter](#) (1)

Digital multimeter with diode tester is ideal, but any ohmmeter should be sufficient.

- [Tweezers](#) (1)

Curved tweezers is most ergonomic, but regular tweezers should get the job done.

- [Soldering Iron](#) (1)

A small enough tip to work with surface mounted component is required.



PARTS:

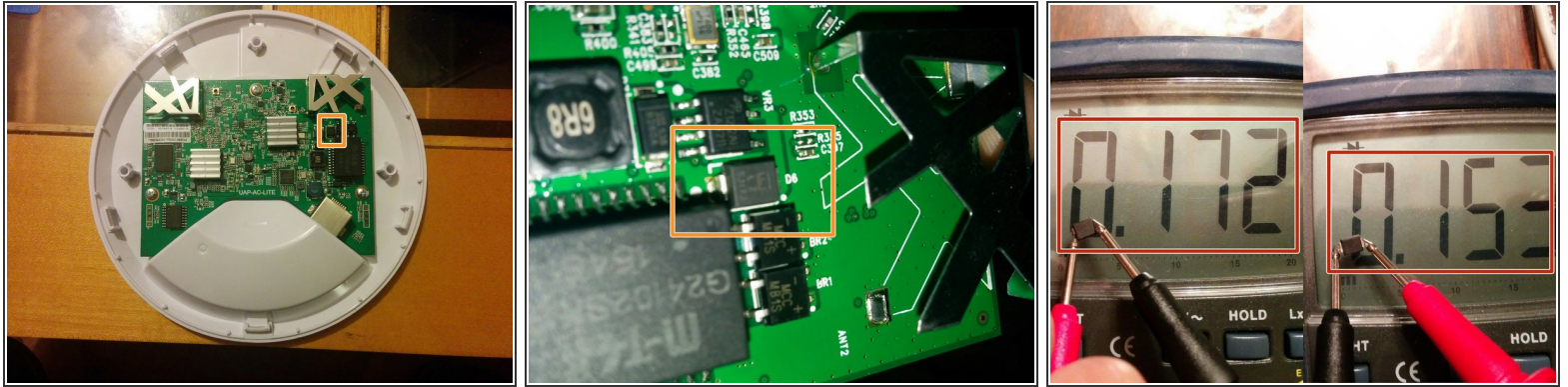
- [LittleFuse SMBJ24A](#) (1)

Step 1 — Open the UAP-AC-LITE



- The front cover is secured by 5 tabs.
 - Work the Jimmy into the space near a clip, and create a big enough gap to insert a prying tool. Moderate pressure from a prying tool should force the clips open.
 - There are a number of alignment tabs that can get in the way. It is best to try and work the Jimmy towards the center of the front cover, hugging its inside surface.
- The PCB is held down by 3 screws. It is not necessary to remove the board for this repair.

Step 2 — Test the TVS diode



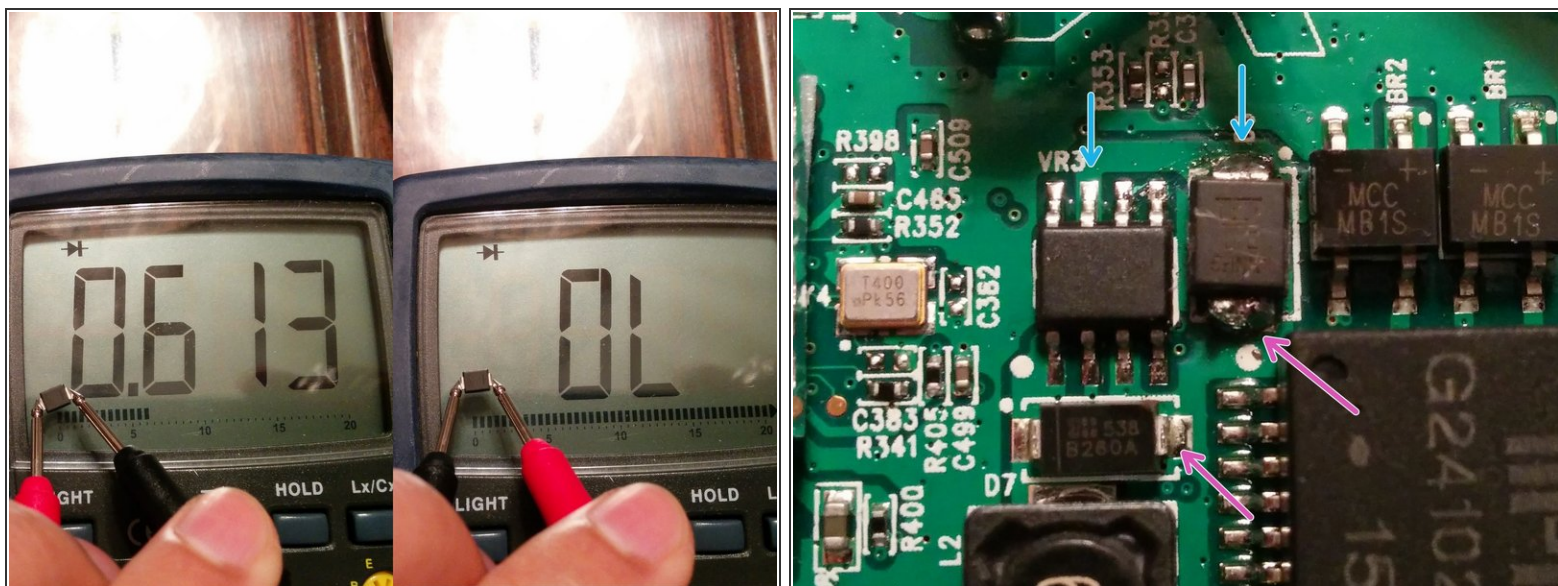
- The TVS diode is located between the antenna and a large IC on the RJ45 port side of the board. It's PCB marking is **D6**.
 - It is a LittleFuse 24V uni-directional TVS diode, with J leads (SMBJ24A). Note the location of the white bar on the diode, which marks its orientation.
- Use a multimeter or ohmmeter to test that the diode has indeed shorted. A shorted diode will read less than 1 Ohm in both directions. A working diode will read significantly higher resistance in one direction relative to the other.
- ⓘ If the diode is not shorted, then something else is wrong, and proceeding further may or may not help fix your access point.

Step 3 — Remove the broken diode



- Desolder the broken diode. Apply heat to one lead while lifting the diode with tweezers. Once the solder melts the part should lift up. Repeat on the other lead.
- ⓘ If the solder does not seem to melt, and the temperature is already plenty high, try using a bigger tip. Sometimes that helps to transfer more heat to the lead, melting the solder faster.
- ⓘ Once the shorted diode is removed, the access point should power up and work as normal. However, omitting this part will potentially cause more damage if an over voltage event occurs.

Step 4 — Install new diode



- ☑ Make sure to test the new diode before installing it. A working TVS diode will show much higher resistance in one direction relative to the other.
- Install the new diode.
 - ⚠ Note the marking on the diode which indicates its orientation. The bar must be pointing **towards the antenna**.
 - Apply flux to the pads, then add a thin layer of solder. If solder does not stick to the pads, you can add it to the underside of the diode pins instead.
 - Hold the new diode in place using tweezers. While applying downward force, apply heat to one pin near the solder until the solder melts and makes a connection. Repeat with the other lead.
 - Verify that the connections are good. There should be continuity between: one pin of D6 and a pin in VR3, and; the other pin of D6 and D7.

To reassemble your device, reattach front cover.