

Matrix Amplification

Repair procedure: TOPSwitch PSU

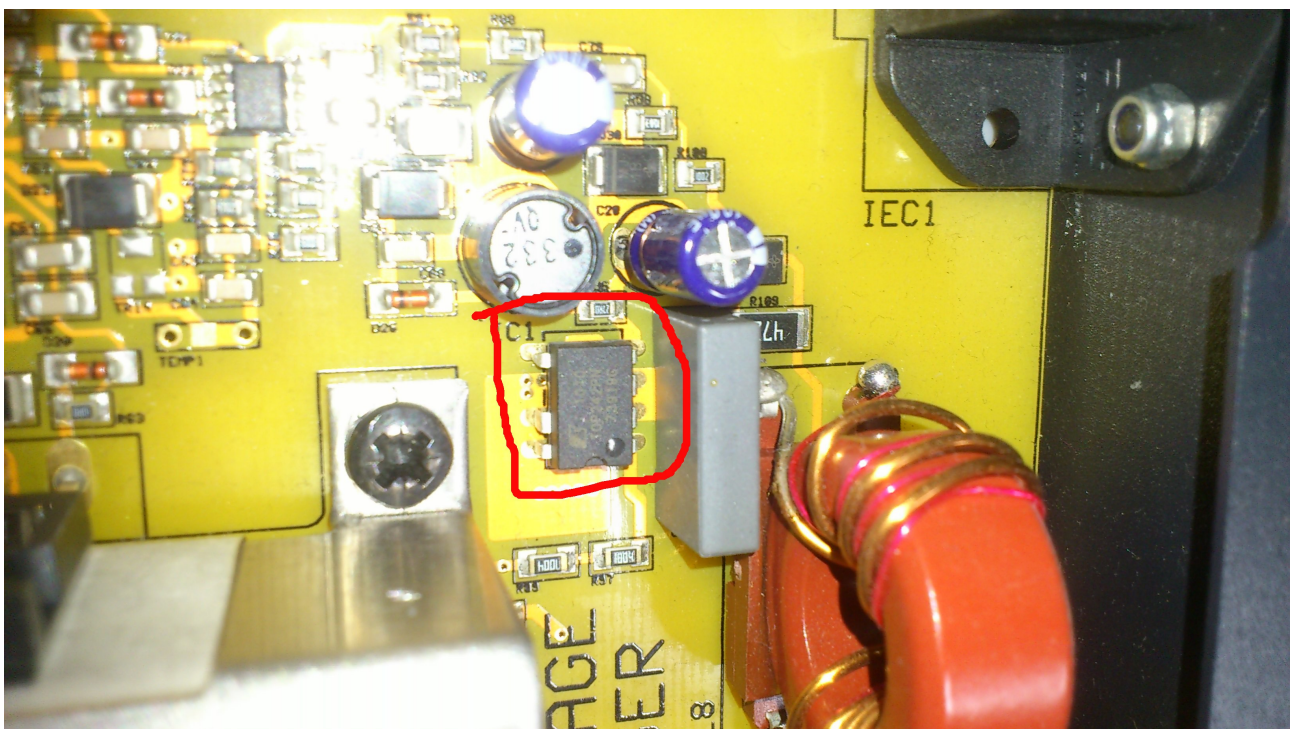
Applicable models: ALL 1U and 2U “GT” series guitar amplifier products.

Notes: TOPSwitch failure is rare, however repair is simple and can be performed by a technician with average soldering skills and without removing the board from the unit.

WARNING: Unplug the amplifier from the power source completely and wait AT LEAST 10 minutes before removing the covers.

Remove the (12) screws from the amplifier top cover, remove the cover and keep the screws safe.

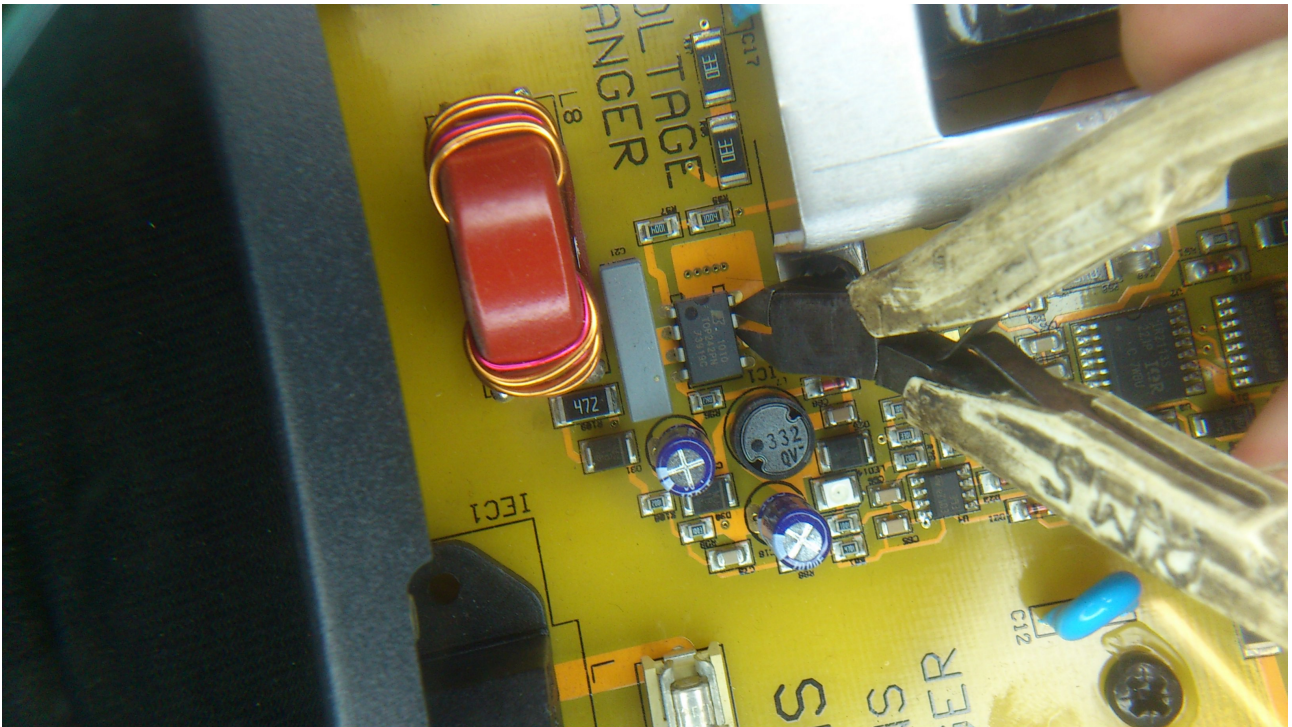
The TOPSwitch PSU IC is a 7 Pin, DIL chip, and is identified in the following picture:



If the device fails, the amp will: power on normally, then after about 10 to 30 minutes, the amp will shut down completely, no front panel lights, no fans. Power down occurs when the TOPSwitch IC reaches 125 degrees C. Allowing it to cool will restore operation of the amplifier. The normal running temperature of this IC is around 75 to 85 degrees.

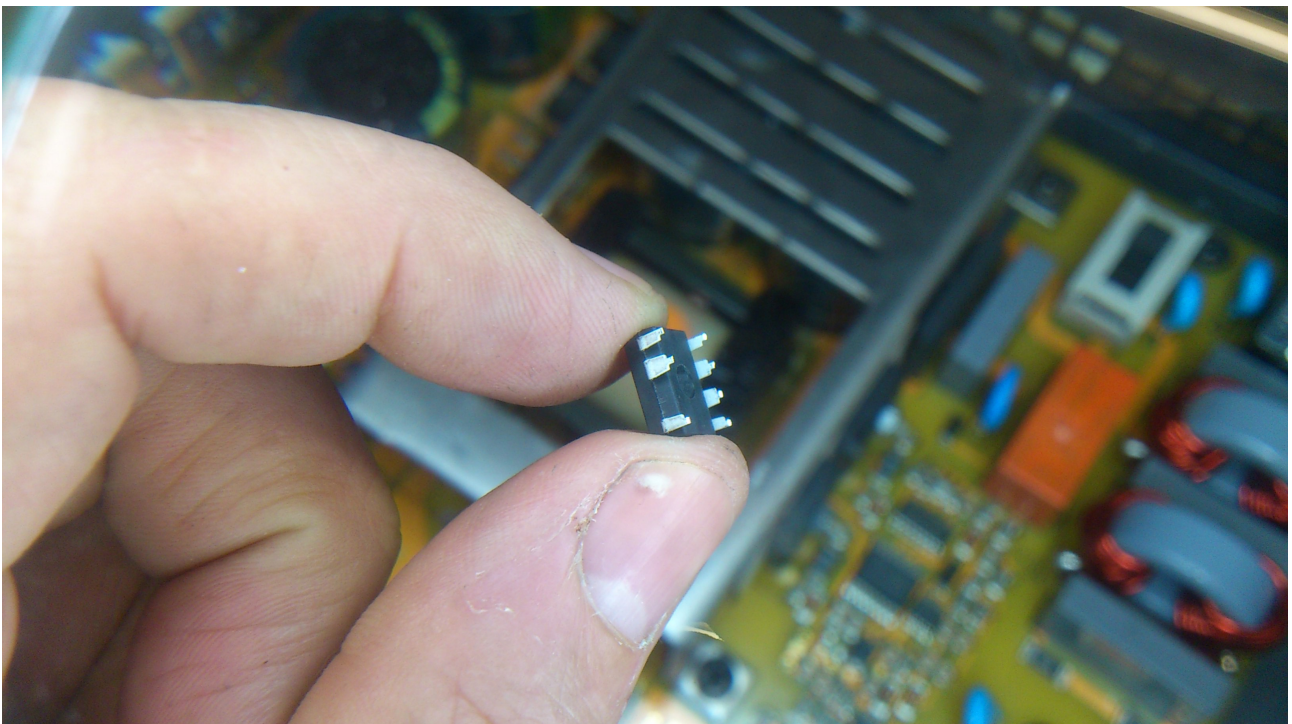
It is possible to change this IC without removing the board from the unit.

Step 1: Using fine-nosed flush-cutting wire cutters, cut the legs from the IC, cut as close to the body of the chip as possible.



Step 2: (no image) With a soldering iron, heat the remaining part of each chip leg close to the board surface for around 5 seconds. Using tweezers or fine pliers, grasp the leg and remove it from the board. You will need a little more heat on the legs on the “groundplane” sections, but all should come out fairly easily. We use lead-free solder, so use a hot tip on your iron.

Step 3: prepare a new IC, by cutting the legs to the seating-plane of the chip as shown below:



Step 4: Simply solder the IC to the TOP side of the board, in the correct orientation. Note the device has 7 legs, so it is easy to see which way around to mount it. Use care when soldering not to melt adjacent capacitors and other components with your iron. Note that several of the pins are connected to a common ground plane, so solder bridges between these pins are not an issue and may even help conduct heat to the groundplane.

Verification: The amp should now run normally, if you have a infra-red thermometer, check the surface temperature of the IC, it should be around 75 to 85 degrees C. A temperature in excess of 100 degrees after 10 minutes indicates a fault condition.