

## SMA/Q

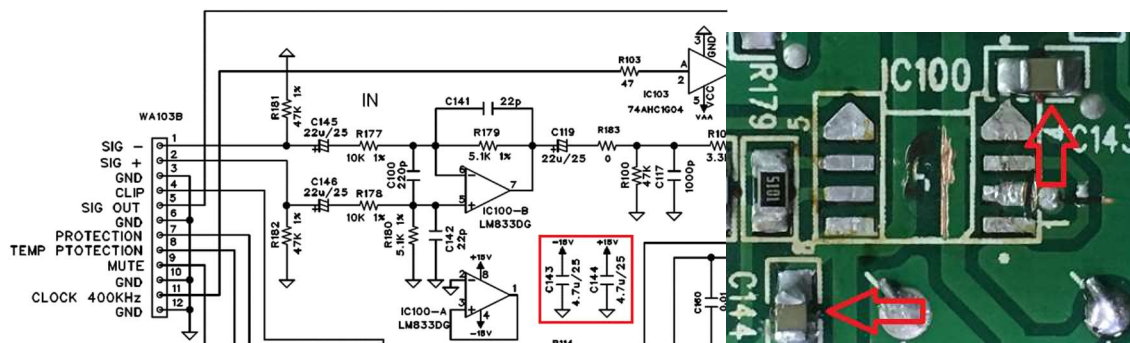
### Issue description:

SMPS breaks down due to overload.

This failure can be due to two possible problems for the power supply. Both courses are explained and resolved in this document.

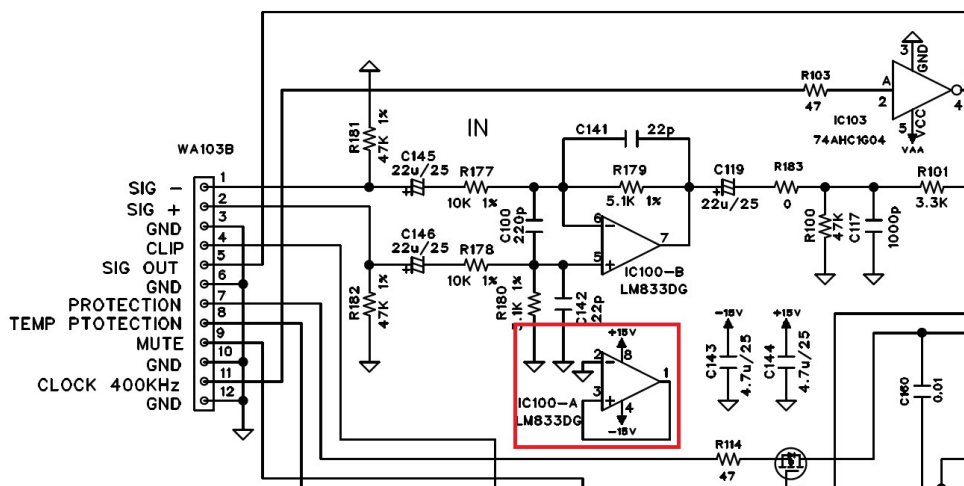
Both can be found on the amplifier boards and have caused the +/-15V to fail and leads to R336 over heating and burning the power supply PCB.

One possible reason for the short developing on the +/-15V is the break down or leaking from C143 and C144 4.7µF (shown below). These two capacitors need to be measured and replaced if needed found to be faulty, ensure you measure these components on all amplifier board within the product.



The second possible course is due to IC100 (LM833DG) becoming unstable.

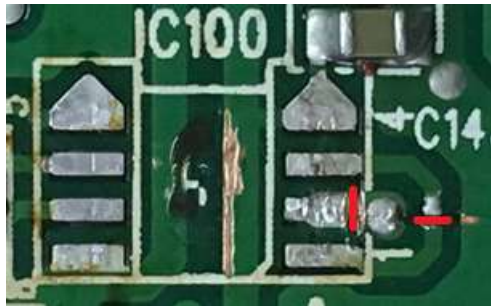
On the current Power Amp PCB the output (1) of op-amp IC 100 / LM 833 is feedback to the + input (3) and the - input (2) to the ground. This can cause instability due to the positive feedback. The output can reach the positive or negative supply tension. In worst case situation it will cause heat build-up and break down of the IC causing a short on the -15V line.



Corrective action:

Simply replacing this component will correct the problem, but not provide a long-term solution, to prevent this component becoming unstable in the future, it is best to invert the feedback to a negative state. connect the output (1) with the – input (2) and the + input (3) to the ground.

Cut the “U-turn” between pin 1 & 3 and cut the track linking pin2 to ground (below).



Connect Pin 1 & 2 together (a simple solder link is all that is needed), connect Pin 3 to ground (see below).



Test:

Clean the PCB and confirm the rework with a visual test. Make sure there are no short circuits after soldering (use ohm-meter to confirm). Remount the Power Amp PCB into the chassis and reconnect all wires/connectors. Test for correct working of the device and when done remount the top cover.